

COPPER

Properties—Copper is the only metal that is red in color. It has a bright metallic luster, is soft (hardness = 2.5 to 3), is highly ductile and malleable, and has good though variable tensile strength, depending on the physical condition of the metal. Copper is resistant to corrosion and has excellent heat and electrical conductivity. It has a higher electrical volume conductivity than any metal other than silver, but aluminum has double the electrical mass conductivity of copper. The metal is an excellent reflector of infrared radiation. Chemically, it exhibits valences of 1 and 2. All the soluble copper salts are poisonous. Other properties are shown in the table on page 12.

Uses—Copper is one of the most widely used metals, both in its pure form and as a base for many alloys, as well as in its compounds. Most of its uses depend upon its good conductivity of electricity and heat, and its strength, durability, and easy workability. About one-third of the consumption is for electrical manufacture, with other uses following in approximately this order: electrical wire and cable, automobile parts, building materials, household appliances, ammunition, and others. The shapes most commonly used are wire, sheet, and tube, but much of the metal is cast, especially as alloys. Copper is alloyed with zinc to make brass, with tin to make bronze, gun metal, and bell metal, with aluminum to make aluminum-bronze, with zinc and nickel to make German silver, with nickel, gold, and silver to make coinage metals, and with these and other metals for other special alloys. Beryllium added to copper gives an alloy of great strength and excellent high-temperature characteristics. Copper oxide and salts are used in special paints, as coloring agents in glass and ceramic glazes, and as antiseptics and insecticides.

Production—Copper production is seventh in value among the metals produced in the United States. Domestic production exceeded consumption for many years prior to 1938, (with the exception of 1932 to 1936) and the excess was exported, but each year since 1939 we have imported copper in substantial quantities. Peak United States production was 1,090,818 tons of metal in 1943, but the 1952 production of 928,000 tons was only about 15 percent less than this figure. Yearly production has varied greatly, depending upon general economic conditions. For example, prior to 1942 the peak production was 997,555 tons of copper in the boom year of 1929, but, during the depression year of 1933, only 4 years later, production had dropped by 81 percent to only 190,543 tons.

The first recorded production in Washington was 39,785 pounds of copper in 1894, after which no copper output was recorded for 5 years until 1899. Since that date production has been continuous but quite variable, ranging from a minimum of less than 3 tons of metal in 1932 to a maximum of 9,612 tons in 1940. Total production in the state through 1952 was 105,605 tons, valued at \$32,369,845. In 1950 Washington ranked eighth among the states in production, but 92 percent of the United States total came from the first five states: Arizona, Montana, Utah, Nevada, and Michigan, in that order. The 1952 production

of 4,357 short tons of copper, valued at \$2,108,788, accounted for 14 percent of the value of metallic ore mined in Washington in that year. Of the large copper mines in this country, the Howe Sound mine in Chelan County ranked eighteenth in 1950, and it contributed 98 percent of the copper mined in the state. In 1950 there were 26 copper smelters and refineries operating, of which 1, owned by the American Smelting & Refining Co., is in Washington, at Tacoma.

Prices—In the past half century the trends in the price of copper have generally paralleled those for lead and zinc, but copper prices have maintained a higher level and have fluctuated more widely, averaging about 14 cents per pound. The highest yearly average price since 1897 was reached in 1917 at 29.2 cents, and the lowest was 5.6 cents in 1932. Between these extremes the yearly average price has risen to peaks 11 times, with an equal number of lows, in the period from 1897, when the price was 11.3 cents, to 1953, when the price was 28.6 cents. After government price ceilings were lifted early in 1953 the price rose rapidly, so that by April of that year it was at a high of 30 cents per pound, where it remained through 1954. Early in 1955 the price rose rapidly to 35.7 cents, a price which was exceeded only in 1917 at 37 cents. In September 1955 the price rose to an all-time high of 50 cents per pound.

Ore minerals—Copper occurs native and as a principal constituent of more than 160 minerals in the form of sulfides, oxides, and carbonates, and less commonly as antimonides, arsenates, phosphates, silicates, and sulfates. Of these minerals, about 16 are of commercial importance, and 6 have accounted for most of the copper mined in North America. The important ore minerals are sulfides, of which the most abundant and widely distributed is chalcopyrite, CuFeS_2 , containing 34.5 percent copper. Other sulfides are: bornite, Cu_5FeS_4 , containing 63.3 percent copper; chalcocite, Cu_2S , containing 79.8 percent copper; covellite, CuS , containing 66.4 percent copper; enargite, Cu_3AsS_4 , containing 48.3 percent copper; tetrahedrite, $(\text{Cu},\text{Fe})_{12}\text{Sb}_4\text{S}_{13}$, containing about 52.1 percent copper; and tennantite $(\text{Cu},\text{Fe})_{12}\text{As}_4\text{S}_{13}$, containing about 57.0 percent copper. Some of the more important oxidized copper minerals are: cuprite, Cu_2O , containing 88.8 percent copper; tenorite, CuO , containing 79.8 percent copper; malachite, $\text{CuCO}_3 \cdot \text{Cu}(\text{OH})_2$, containing 57.3 percent copper; azurite, $2\text{CuCO}_3 \cdot (\text{OH})_2$, containing 55.1 percent copper; and chrysocolla, $\text{CuSiO}_3 \cdot 2\text{H}_2\text{O}$, containing 36.0 percent copper. Native copper is the ore mineral in a few deposits, especially in Michigan. All these minerals except enargite and tenorite have been reported in Washington, but by far the commonest here is chalcopyrite.

Geology—Copper is the most abundant of the base metals. Its minerals are numerous and widely though irregularly distributed, and they are associated with many different metals in deposits in various rock types ranging in age from pre-Cambrian to Quaternary. Gangue minerals in the deposits may include quartz, calcite, siderite, barite, rhodochrosite, fluorite, sericite, or tourmaline. The types of deposits in which copper is found include mag-

matic segregations, contact-metamorphic, hydrothermal, and supergene (secondary) enrichment deposits. All the large copper deposits and most of the smaller ones are of hydrothermal origin, and in most of them replacement has been dominant over cavity filling. The ores are genetically related to igneous rocks. The host rocks for the huge, well-known "porphyry copper" deposits of the southwest are in stocklike intrusions of monzonitic porphyries or rocks intruded by them. The ore in the larger

deposits is disseminated and low grade, seldom averaging as much as 1.5 percent copper and in some instances as low as 0.5 percent. Vein deposits are smaller, and to be profitably operated must be of considerably higher grade. Many copper deposits have been leached near the surface and enriched at a moderate depth by descending surface water, but this supergene enrichment has been absent or of only minor importance in the origin of copper deposits in Washington.

OCCURRENCES

The maps showing the numbered copper occurrences are plates 6 and 7, on pages 19 and 21 in volume 2.

CHELAN COUNTY

Arizona (27)

Loc: Sec. 11, (31-18E), between Cascade and Meadow Creeks. **Ore:** Copper, gold, silver. **Ore min:** Chalcopyrite, pyrrhotite. **Assays:** 0.49 oz. Au, 1.4 oz. Ag, 1.92% Cu. **Ref:** 67, p. 31. 114, no. 5, p. 84.

Aurelia Crown

(see Crown Point under molybdenum)

Bald Eagle and Gray Eagle

Loc: On a fork of Jack Cr., a tributary of Icicle Cr. **Owner:** L. A. Parker and H. C. Castlebury (1897). **Ore:** Copper. **Ore min:** Tetrahedrite. **Dev:** 16-ft. drift. **Ref:** 63, p. 66. 67, p. 27.

Big Elephant

(see under gold)

Bismarck (32)

(see under zinc)

Black Republican

Loc: Leavenworth dist. **Ore:** Copper, nickel, cobalt. **Ref:** 43, 1895, p. 184. 67, p. 28. 105, 1895, p. 399. 141, p. 63.

Black Warrior (9)

Loc: NE¼ sec. 32, (35-14E), at upper end of lower Horse-shoe Basin. **Elev:** 4,725 ft. **Access:** Road from Stehekin, 50 mi. by boat to Lakeside, and 4 mi. by road to railroad at Chelan Falls. **Prop:** 3 patented claims: Black Warrior, Blue Devil, Golden Gate; and 3 unpatented claims: Waterfall Nos. 1 and 2, and Campsite. **Owner:** Black Warrior Mining Co., Spokane, Wash. (1946—). Geo. B. Markel, Hazelton, Pa. (1905-1946). **Ore:** Copper, zinc, lead, silver, gold. **Ore min:** Chalcopyrite, sphalerite, galena, pyrite, pyrrhotite, arsenopyrite. **Gangue:** Silicified gneiss. **Deposit:** Sulfide lenses and streaks in a 20- to 30-ft. silicified zone at contact between diabase dike and gneiss. **Dev:** 260-ft. crosscut, 563-ft. drift (1950). **Assays:** Av. of several surface samples from av. width of 3 ft. shows 3.44% Pb, 4.12% Zn, 0.74% Cu, 0.026 oz. Au, 4.67 oz. Ag. Sample across 48 in. of ore at face of drift in 1948 showed 2.01% Cu, 2.10% Zn, 1.01% Pb, 4.80 oz. Ag, 0.02 oz. Au. **Ref:** 63, p. 83. 67, p. 39. 88, pp. 53-54. 133, p. 30. 157. 158.

Black and White (66)

(see under gold)

Blankenship (20)

Loc: Sec. 10, (33-16E), at mouth of Agnes Cr. **Access:** About 12 mi. of road from Stehekin. **Prop:** 7 claims and a millsite. **Owner:** E. O. Blankenship, Stehekin, Wash. (1930). **Ore:** Copper. **Ref:** 67, p. 39.

Blewett

(see Peshastin under gold)

Blinn (55)

(see under gold)

Blue Jay (28)

Loc: S½ sec. 1, (31-18E), on E. bank of Meadow Cr. **Elev:** 2,100 ft. **Access:** About 1 mi. of trail from Lk. Chelan at mouth of Meadow Cr. **Prop:** 8 claims (1933). 2 claims (1947): Starbuck, Lawrence. **Owner:** A. G. Mathers, Chelan, Wash. (1947). Chelan Gold Mining Co. (1897). **Ore:** Copper, gold, silver, cobalt. **Ore min:** Pyrrhotite, chalcopyrite, arsenopyrite. **Gangue:** Kaolin, sericite. **Deposit:** Hydrothermally altered zone in granite gneiss contains disseminated ore minerals and solid lenses of sulfides as much as 2 ft. wide. Pyrrhotite constitutes more than 90% of the ore minerals. **Assays:** Sample across 18 in. of sulfide minerals on the surface assayed 0.16 oz. Au, 1.48 oz. Ag, 4.02% Cu. Sample across 13 in. of massive sulfides in lower adit assayed 0.26 oz. Au, 2.50 oz. Ag, 6.86% Cu. **Ref:** 63, pp. 80-81. 67, p. 31. 104, 11/30/33, p. 16. 106, 11/2/33, p. 4. 114, no. 5, 1909, p. 84. 158.

Blue Jay Extension (33)

Loc: Sec. 12, (31-18E), Meadow Cr. dist. **Prop:** 1 claim. **Owner:** A. G. Mathers, Chelan, Wash. (1947). O. Graham, Anacortes, Wash. (1897). **Ore:** Copper, gold, silver. **Dev:** 30-ft. open cut and adit. **Assays:** \$10 to \$19 in Au, \$5 to \$9.50 in Ag. **Ref:** 63, p. 81. 67, p. 31.

Bryan (42)

Loc: Sec. 9, (30-16E), on Phelps Ridge, Chiwawa dist. **Prop:** 20 claims. Probably part of property held by the Royal Development Co. (1940). **Owner:** Una Mining & Milling Co., Seattle, Wash. (1897). **Ore:** Copper, gold, silver. **Ore min:** Chalcopyrite, native copper. **Ref:** 63, p. 78. 67, p. 22.

Butte

Loc: On Bridge Cr. about 25 mi. from the head of Lk. Chelan, Stehekin dist. **Access:** Road and trail from Stehekin. **Owner:** Butte Gold, Silver, & Copper Mining Co. (1902-1907). **Ore:** Copper, gold, silver. **Deposit:** 2 veins, one of which has a width of 8 ft. **Dev:** 56-ft. adit, 42-ft. adit. **Ref:** 33, 1907, p. 407. 67, p. 39. 88, p. 54.

Caledonia (64)

(see under gold)

Canada (29)

Loc: Sec. 1, (31-18E), Meadow Cr. dist. **Prop:** 1 claim. **Owner:** William Bigger (1897). **Ore:** Copper, gold, silver. **Ref:** 63, p. 81. 67, p. 31.

Chelan

(see Dick under nickel)

Copper King

(see Robischaud under molybdenum)

Copper King (Pickwick)

(see Pickwick)

Crown Point (38)

(see under molybdenum)

Crown Power

(see Crown Point under molybdenum)

Crown Prince and Free Coinage

Loc: Stehekin dist. **Owner:** Messrs. Cook, Clarke, et al., Spokane, Wash. (1897). **Ore:** Copper, gold, silver. **Ore min:** Copper sulfides. **Assays:** 31% Cu, \$4.85 Au, 3 oz. Ag. **Ref:** 63, pp. 83-84. 67, p. 39.

Davenport (4)

Loc: Sec. 29, (35-15E), in upper Horseshoe Basin. **Prop:** May be part of Stimpson property. **Owner:** Horseshoe Basin Mining & Development Co. (1949). Cascade Copper Co. (1907-1908). **Ore:** Copper, silver, lead, gold. **Ore min:** Galena, chalcopryrite. **Deposit:** Mineralized zone 40 ft. wide. **Dev:** More than 500 ft. of adit. **Assays:** \$69 per ton in lead, copper, silver, and gold in ore shipped. **Prod:** 1 ton prior to 1901. **Ref:** 33, 1907, p. 451; 1908, p. 493. 63, p. 83. 67, p. 38. 68, p. 10. 88, p. 54.

Defender (1)

Loc: NE¼ sec. 28, (35-16E), on Grizzly Cr., Stehekin dist. **Prop:** 3 claims. **Owner:** M. A. Allmandinger, Daniel Devore, and others (1897). **Ore:** Copper, silver, lead. **Ore min:** Galena, chalcopryrite, pyrite. **Dev:** 20-ft. open cut. **Ref:** 63, p. 84. 67, p. 39.

Diamond Dick

(see Black and White under gold)

Dick (47)

(see under nickel)

Doubtful (13)

(see under lead)

Eagle and Iowa (56)

(see under gold)

Emma Lee

(see under gold)

Esmeralda

(see under gold)

Falls (14)

(see under lead)

Flamingo (17)

Loc: Sec. 9, (34-15E), Stehekin dist. **Owner:** J. M. Scheuy-eaulle et al. (1897). **Ore:** Copper, gold, silver. **Assays:** 8% Cu, \$3 Au, 20 oz. Ag. **Ref:** 63, p. 83. 67, p. 40.

Free Coinage

(see Crown Prince and Free Coinage)

Galena (5)

(see under lead)

Gem (34)

Loc: NW¼ sec. 12, (31-18E), just E. of the Blue Jay property, Meadow Cr. dist. **Prop:** 2 claims. **Owner:** Captain Johnson (1897). **Ore:** Copper, gold, silver. **Assays:** 0.23 oz. Au, 2.0 oz. Ag, 5.47% Cu. **Ref:** 63, p. 81. 67, p. 32. 114, no. 5, 1909, p. 84.

Golden Wedge (67)

(see under gold)

Grace (30)

Loc: SE. cor. sec. 1, (31-18E), on Cascade Cr., Meadow Cr. dist. **Prop:** 6 or 7 claims. **Owner:** John Gray, Chelan, Wash. (1947). **Ore:** Copper, silver, gold. **Ore min:** Pyrrhotite, chalcopryrite. **Gangue:** Kaolin. **Deposit:** Hydrothermally altered zone in granite gneiss carries strong stringers of sulfide min-

erals as much as 1½ ft. in width. Sulfides are 98% pyrrhotite and 2 % chalcopryrite. **Dev:** 146-ft. adit, 17-ft. open cut, and 13-ft. adit. **Assays:** A sample across 14 in. of a particularly high-grade streak in the lower tunnel assayed 0.12% Cu, 0.20 oz. Ag, tr. Au. **Ref:** 67, p. 32. 114, no. 5, 1909, p. 84. 158.

Grand View (50)

Loc: On E. side of Fourth Cr. about 3 mi. SE. of Mt. Stuart. **Ore:** Copper, gold. **Ore min:** Native copper, cuprite. **Deposit:** Irregular ore body in a zone of sheared serpentine. **Ref:** 67, p. 16. 144, p. 9.

Gray Eagle

(see Bald Eagle and Gray Eagle)

Hidden Treasure (46)

(see under gold)

Holden (Howe Sound, Irene) (40)

Loc: Secs. 18 and 19, (31-17E), and secs. 12 and 13, (31-16E), on Railroad Cr. **Elev:** 3,435 ft. at haulage level. **Access:** Boat from Chelan to Lucerne and 12 mi. of good road from there to mine. **Prop:** 13 patented and 78 unpatented claims. **Owner:** Howe Sound Co., New York, N. Y. (1937 —). J. H. Holden (1892-1896). Chelan Copper Co. (1907). Holden Gold & Copper Co. (1901-1924). Lake Chelan Copper Co. (1925-1932). Britannia Mining & Smelting Co., Ltd. (1928). Chelan Copper Mining Co. (1930-1936). **Ore:** Copper, gold, zinc, silver. **Ore min:** Chalcopryrite, pyrrhotite, pyrite, sphalerite, galena, magnetite, chalcocite, malachite, native copper, molybdenite, pitchblende (?), scheelite. **Gangue:** Silicified metamorphosed sediments. **Deposit:** Zone of sulfide disseminations 20 to 75 ft. wide has exposed length of 2,500 ft. and depth of 2,500 ft. Ore occurs in a roof pendant of metamorphic rocks cut by granitic dikes. Slight amount of radioactive mineralization in footwall zone in W. end of mine at 1,950- and 2,325-ft. levels. **Dev:** 247,566 ft. of drifts, crosscuts, and raises; 231,922 ft. of core drilling (1951). **Improv:** 2,000-ton flotation mill, modern camp for 450 men, roads, docks, tug, barges, and all necessary facilities (1955). **Assays:** Mill feed av. 1.45% Cu, 0.09 oz. Au, 0.344 oz. Ag, 1.02% Zn in 1940; and 0.78% Cu, 0.044 oz. Au, 0.213 oz. Ag, 0.48% Zn in 1951. Samples from basic dike outside of ore zone assayed 0.2% to 0.46% Ni. Radiometric tests showed 0.19% U₃O₈ equivalent in one sample. **Prod:** 1938-1955. From 1938 to 1951 8,320,497 tons of ore were produced. 1950 production was 5,005 tons Cu, 2,531 tons Zn. 1951 production was 8,543,020 lb. Cu, 5,323,436 lb. Zn, 24,205 oz. Au, 117,437 oz. Ag from 550,530 tons of ore. **Ref:** 1-A, vol. 163, pp. 73-95. 37, p. 16. 63, p. 82. 67, pp. 35-36. 88, pp. 55-56. 93, Ch. III, p. 13. 97, 1929, 1930, 1937-1952. 98, 1920-1926. 104, 1/15/32, p. 29; 12/30/32, p. 24; 6/15/34, p. 29; 6/30/34, p. 23; 11/15/36, p. 27. 105, 1907, p. 41. 108, 11/39, p. 30; 5/40; 6/40. 113, 6/17/37, p. 7. 114, no. 5, 1909. 133, p. 35. 148. 158. 159, p. 137. 175.

Horseshoe Basin (10)

(see under lead)

Howe Sound

(see Holden)

Humbug

(see under lead)

Hummingbird (59)

(see under gold)

Hunter (35)

(see under silver)

Idaho (31)

Loc: Sec. 1, (31-18E), on Meadow Cr. **Elev:** 6,330 ft. **Prop:** 2 claims. **Owner:** Seattle Gold Mining & Development Co.

(1897). **Ore:** Copper, gold, silver. **Ore min:** Sulfides. **Deposit:** Ore is near porphyry dike in granite. **Dev:** 73-ft. adit. **Assays:** 16% Cu, 16 oz. Ag, \$8 to \$16 Au. **Ref:** 63, p. 81. 67, p. 32.

Indiana

(see under lead)

Iowa

(see Eagle and Iowa under gold)

Irene

(see Holden)

Ivanhoe

(see Wilder under gold)

Keefer Brothers (41)

(see under molybdenum)

King Solomon (21)

Loc: SE $\frac{1}{4}$ sec. 36, (32-18E), on Meadow Cr. **Elev:** 5,000 to 5,800 ft. **Access:** Trail from mouth of Meadow Cr. **Prop:** 3 patented claims. **Owner:** John Gray, Chelan, Wash. (1947). **Ore:** Copper, silver, gold, zinc, cobalt. **Ore min:** Pyrrhotite, chalcopyrite, pyrite, sphalerite, arsenopyrite. **Deposit:** Hydrothermally altered zone or zones in granite gneiss 2 to 6 ft. wide. Solid sulfide lenses in the zone are 2 to 8 in. wide and consist mostly of pyrrhotite. **Dev:** 832-ft. adit, 2 caved adits each about 200 ft. long, and a 10-ft. adit. **Assays:** 3 assays across sulfide stringers from 2 of the adits showed tr. Au, 0.60 to 1.80 oz. Ag, 0.49% to 2.58% Cu, and 0.18% to 1.05% Zn. **Ref:** 67, p. 33. 114, no. 5, 1909, p. 82. 158.

King Solomon (Pickwick)

(see Pickwick)

Kingman

(see Galena under lead)

Lake Shyall (19)

Loc: NW $\frac{1}{4}$ sec. 16, (34-15E), on Trapper Lk., Horseshoe Basin area. **Owner:** J. M. Scheueyaulle (1897). **Ore:** Copper, gold, silver. **Ref:** 67, p. 41.

La Rica

(see Peshastin under gold)

Leo

Loc: On Nigger Cr. **Owner:** John and William Lynch (1897). **Ore:** Copper, gold, silver. **Dev:** 60-ft. adit. **Ref:** 63, p. 76.

Little Jap (24)

(see under silver)

Logan (7)

(see under lead)

Lottie S. (18)

Loc: Adjoining the Flamingo prospect, Stehekin dist. **Owner:** J. M. Scheueyaulle et al. (1897). **Ore:** Copper, silver. **Assays:** 9% Cu, 2 oz. Ag. **Ref:** 63, p. 83. 67, p. 41.

Marlin (8)

Loc: Near NE. cor. sec. 36, (35-14E), NE. of Quien Sabe prospect. **Access:** About 3 mi. of trail from Stehekin road. **Prop:** 1 patented claim. **Ore:** Copper, lead, gold. **Ore min:** Pyrite, galena, chalcopyrite. **Gangue:** Quartz. **Deposit:** Quartz vein. **Assays:** \$8 in combined values. **Ref:** 67, pp. 41-42.

Meadow Creek Strike (25)

Loc: SE $\frac{1}{4}$ sec. 2, (31-18E), Meadow Cr. dist. **Prop:** 1 claim. **Owner:** John Gray, Chelan, Wash. (1947). **Ore:** Copper, gold, silver. **Ore min:** Pyrrhotite, pyrite, chalcopyrite. **Gangue:** Quartz. **Deposit:** 5-ft. silicified shear zone in granite gneiss contains numerous mineralized quartz stringers $\frac{1}{4}$ to 2 in. wide.

Dev: 165-ft. adit. **Assays:** A sample at the adit face across a width of 7 ft. assayed 0.84% Cu, 0.04 oz. Au, 0.26 oz. Ag. **Ref:** 67, p. 33. 158.

Meridian (52)

(see under gold)

Minneapolis (2)

(see under gold)

Moscow (22)

Loc: Near E. $\frac{1}{4}$ cor. sec. 35, (32-18E), $\frac{1}{4}$ mi. E. of Round Lk., Meadow Cr. dist. **Elev:** 4,300 ft. **Prop:** 1 claim. **Owner:** Chan McClean, Bill Ziegler, and Hugh Courtney (1947). **Ore:** Copper, gold, silver. **Ore min:** Pyrrhotite, chalcopyrite, arsenopyrite. **Gangue:** Quartz. **Deposit:** A hydrothermally altered zone in granite gneiss with an av. width of 6 ft. contains seams of sulfides and sulfide-bearing quartz. **Dev:** 20-ft. adit, 10-ft. adit, caved adit (1947). **Assays:** A sample across 52 in. of the zone in the upper adit assayed 0.24 oz. Ag, 0.06% Cu, tr. Au. A 3-in. seam of pyrrhotite assayed 1.01% Cu, 1.22 oz. Ag, 0.06 oz. Au, 0.21% As. **Ref:** 63, p. 81. 67, p. 33. 158.

Mountain Sheik

Loc: On Flat Cr. near Sunset prospect, Stehekin dist. **Owner:** J. M. Scheueyaulle et al. (1897). **Ore:** Copper, silver. **Assays:** 15 oz. Ag, 10% Cu. **Ref:** 63, p. 83. 67, p. 42.

Nebraska (23)

Loc: NW $\frac{1}{4}$ sec. 35, (32-18E), Meadow Cr. dist. **Prop:** 1 claim. **Owner:** L. H. Millard (1897). **Ore:** Copper, gold, silver, lead. **Ore min:** Copper sulfides, galena. **Deposit:** 4- to 8-in. paystreak in mineralized porphyry. **Dev:** 36-ft. adit. **Assays:** \$1.25 in Au, 21 oz. Ag. **Ref:** 63, p. 81. 67, p. 33.

Nelson

(see Pickwick)

New York (58)

(see under gold)

North Pole (53)

(see under gold)

Olympia (60)

(see under gold)

Ontario (54)

(see under gold)

Peshastin (61)

(see under gold)

Phipps (62)

(see under gold)

Phyllis (26)

Loc: NE $\frac{1}{4}$ sec. 2, (31-18E), on Meadow Cr. **Access:** 1 $\frac{1}{2}$ mi. of trail from mouth of Meadow Cr. **Prop:** 2 claims. **Owner:** John Gray, Lakeside, Wash. (1947). **Ore:** Copper, gold, silver. **Ore min:** Pyrrhotite, pyrite, chalcopyrite. **Deposit:** Hydrothermally altered zone in granite gneiss 4 ft. wide. Zone contains scattered pyrite and $\frac{1}{4}$ - to 2-in. mineralized veinlets of quartz. **Dev:** 65-ft. adit. **Assays:** An old assay showed 21% Cu, 6 oz. Ag, and \$6.50 Au. This assay could have been obtained only on a very small picked sample. **Ref:** 63, p. 81. 67, pp. 33-34. 158.

Pickwick (Copper King, King Solomon, Nelson, Van Epps Copper) (48)

Loc: Secs. 9 and 10, (23-15E), in basin at head of Jack Cr., a tributary to Icicle Cr. near its source. **Elev:** 5,316 ft. at open pit. **Access:** 10 mi. by trail and about 18 mi. by road to railroad at Leavenworth or 3 $\frac{1}{2}$ mi. by trail and 30 mi. by road to railroad at Cle Elum. **Prop:** 7 unpatented claims. **Owner:** S. J. Holden

and associates (1946—) leasing to Phantom Creek Copper, Inc., Tacoma, Wash. (1953—). Pickwick Mining & Development Co. (1897). Vanno Mining Co. (1921). Frank Sontag et al., Wenatchee, Wash. (1942). **Ore:** Copper, gold, silver. **Ore min:** Bornite, chalcopryrite, pyrite, copper carbonate, pyrrhotite. **Gangue:** Decomposed quartz. **Deposit:** Said to be a large ore body possibly 120 ft. wide in peridotite near granite contact. Ore minerals disseminated throughout that portion exposed by the workings. **Dev:** 110-ft. shaft with 175-ft. crosscut and 80-ft. drift on 50-ft. level. 2,500-ft. crosscut, raise from crosscut to shaft. Open pit 50 ft. square. **Assays:** 13 tons shipped showed 4.22% Cu, 1.13 oz. Au. **Prod:** 13 tons 1917. **Ref:** 63, pp. 62, 66. 67, pp. 28, 29. 157. 158.

Quien Sabe (15)

(see under lead)

Rainier (57)

(see under gold)

Red Cap (43)

(see under gold)

Red Cloud and Tralee

Loc: On Ruby Cr., a tributary to Nigger Cr. **Ore:** Copper, gold, nickel, cobalt. **Ref:** 63, p. 77.

Red Hill (44)

(see under gold)

Red Mountain (Royal) (45)

Loc: Secs. 15 and 22, (30-16E), at S. end of Phelps Ridge (Red Mtn.), Chiwawa dist. **Elev:** 2,800 and 3,650 ft. **Access:** Good road. **Prop:** 112 claims, 22 of which are patented. **Owner:** Jessie Smith, Seattle, Wash. (1952—). North Star Mining Co. (1902-1907). Royal Development Co. (1917-1946). **Ore:** Copper, silver, gold. **Ore min:** Pyrrhotite, chalcopryrite, sphalerite, pyrite, galena, arsenopyrite, scheelite. **Gangue:** Chlorite, quartz, calcite, biotite, sericite. **Deposit:** Mineralized breccia zone at contact of gneiss and diorite as much as 250 ft. wide. **Dev:** 700-ft. St. Francis adit, 11,000-ft. Trinity crosscut with several hundred ft. of drifts 850 ft. below St. Francis adit, and connecting raise and 3 intermediate levels. **Improv:** Sawmill and 400-ton mill sold for junk in 1946. **Assays:** Tr. to 1.93% Cu, 0.61 to 5.38 oz. Ag, and a little Au. Company records indicate only 1 or 2 very small areas with more than 1% Cu. One area on Trinity level 20 ft. wide, 100 ft. long av. 0.85% Cu, 1.2 oz. Ag, and another area 2 or 3 times this size av. 0.5% Cu, 0.8 oz. Ag. Only traces of tungsten. **Prod:** 1930, 1935, 10,000 tons 1936, 5,825 tons 1937, 12 tons 1940. **Ref:** 8. 33, 1907, p. 875. 37, pp. 14-15. 67, p. 22. 97, 1929, 1930, 1937, 1938. 98, 1922-1931. 104, 8/15/35, p. 26; 9/15/36, p. 34; 10/30/36, p. 32. 106, no. 1, 1929; 8/4/32. 108, 7/39, p. 22. 113, Apr.-May 1934, p. 15; 8/20/36, p. 6; 1/21/37, p. 7. 136-A. 141, p. 22. 158.

Robischaud (37)

(see under molybdenum)

Rouse (16)

(see under lead)

Royal

(see Red Mountain)

Silver Fiend (49)

(see under lead)

Silver King (36)

Loc: SE¼ sec. 12, (31-18E), on Cascade Cr., Meadow Cr. dist. **Access:** Trail from mouth of creek at Lk. Chelan. **Prop:** 2 claims. **Owner:** Seattle Gold Mining & Development Co. (1897). **Ore:** Copper, gold, lead. **Ore min:** Pyrite, chalcopryrite, galena. **Dev:** 35-ft. adit. **Ref:** 63, p. 81. 67, p. 34.

Silver Trail (39)

Loc: Sec. 8, (31-16E), on Railroad Cr. **Prop:** 36 claims. **Owner:** Chemical Products Association (1925-1926). Aurelia Crown Mines Corp. (1909-1918). Crown Power Molybdenum Co. (1922-1924). **Ore:** Copper, gold, silver, lead, zinc. **Gangue:** Quartz. **Deposit:** 3 kinds of deposits on the property produce copper ore, silver-lead-zinc ore, and gold-bearing quartz. **Assays:** Copper ore ran \$7.40 to \$68.20 per ton, a silver-lead-zinc paystreak gave \$96.81 per ton, and the gold ore ran from \$3 to \$45 per ton. **Prod:** Amount not known. **Ref:** 67, p. 36. 98, 1918-1926. 112, p. 167. 114, no. 5, 1909, p. 68.

Spokane Boy and Girl (11)

Loc: In upper Horseshoe Basin. **Access:** Road from Stehekin and about 1½ mi. of trail. **Prop:** 2 claims. **Owner:** W. E. White, Spokane, Wash. (1938). **Ore:** Copper, gold, silver, lead, zinc. **Ore min:** Chalcopryrite, pyrite, galena, sphalerite. **Gangue:** Quartz. **Deposit:** Heavily mineralized vein 1 to 5 in. wide in gneiss. **Dev:** 2 short adits. **Ref:** 67, p. 43. 158.

Stehekin Mining Co.

Loc: On both sides of Company Cr., Stehekin dist. **Prop:** 7 claims. **Owner:** Stehekin Mining Co. (1897). **Ore:** Copper, gold. **Ore min:** Chalcopryrite, pyrite. **Gangue:** Quartz. **Deposit:** Wide zone in schist is thoroughly impregnated with sulfides. **Assays:** \$2 to \$7 Au, 2% to 15% Cu. **Ref:** 63, p. 84. 67, p. 43.

Sunset (65)

(see under gold)

Texas Jack (6)

Loc: Sec. 29, (35-15E), in upper Horseshoe Basin. **Access:** Road from Stehekin and about 2 mi. of trail. **Prop:** 1 claim. **Owner:** Chelan Copper Co. (1901-1918). **Ore:** Copper, silver. **Deposit:** Vein contains a 20-in. paystreak. **Ref:** 33, 1907, p. 473; 1908, p. 519. 67, p. 45. 88, p. 54. 98, 1918, p. 68.

Tiger (Galena)

(see Galena under lead)

Tiger (3)

(see under gold)

Tralee

(see Red Cloud and Tralee)

Twin Falls (12)

Loc: Under the falls of Horseshoe Cr. below the Black Warrior Mining Co. property. **Prop:** 1 claim. **Owner:** Horseshoe Basin Mining and Development Co., Bremerton, Wash. (1949). **Ore:** Copper. **Ref:** 63, p. 83. 67, p. 44.

Van Epps Copper

(see Pickwick)

Velma (51)

(see under mercury)

White Elephant

(see Wilder under gold)

White Star

(see under lead)

Wilder (63)

(see under gold)

Winesap

(see Dick under nickel)

CLALLAM COUNTY

Angeles Star (3)

(see under zinc)

Crescent (2)

(see under manganese)

Deer Park**Loc:** Clallam County. **Owner:** C. B. McDonnell, Port Angeles, Wash. (1941). **Ore:** Copper, silver, gold. **Ref:** 158.**Gregory-Savage**

(see Angeles Star under zinc)

Kathryn (1)**Loc:** S½ sec. 35, (30-11W), and NW¼ sec. 2, (29-11W), near Snyder Ranger Station. **Access:** 3 mi. by road to U. S. 101. **Prop:** 3 unpatented claims. **Owner:** J. C. Krueger, Port Angeles, Wash. (1920-1952). **Ore:** Copper. **Ore min:** Chalcopryrite, malachite. **Gangue:** Red argillaceous limestone in basalt. **Ref:** 158.**Winter**

(see Angeles Star under zinc)

CLARK COUNTY**Silver Star (1)****Loc:** Secs. 14, 15, 22, and 23, (3-4E), on W. slope of Silver Star Mtn. **Elev:** 1,500 ft. **Access:** 9 mi. by road to railroad at Yacolt. **Prop:** 1,040 acres. **Owner:** Silver Star Mining Co., R. DeMott, Portland, Ore. (1930-1953). **Ore:** Copper, gold, silver, lead, zinc, nickel. **Ore min:** Chalcopryrite, pyrite, siderite, sphalerite, galena, magnetite. **Gangue:** Quartz and altered country rock. **Deposit:** Mineralized extrusive rock. About 2 tons of ore on the dump. **Dev:** 125-ft. adit, 227-ft. adit. **Assays:** 0.08 to 0.24 oz. Au, 0.50 to 2.08 oz. Ag, 2.32% Cu, 3.6% to 12.8% Zn, and 0.34% to 0.4% Pb. A 3.8-ft. channel sample showed 0.9% Zn, 0.3% Cu, 0.9 oz. Ag. **Ref:** 111, p. 10. 158.**COWLITZ COUNTY****Green Mountain (1)**

(see under gold)

FERRY COUNTY**Abe Lincoln (48)****Loc:** Near N. line SE¼ sec. 26, (30-32E), Keller dist. **Ore:** Copper, lead, zinc, molybdenum. **Ore min:** Pyrite, chalcopryrite, galena, sphalerite, molybdenite. **Deposit:** 6-in. quartz vein in which sulfides are distributed in bands. Seams in wall rock coated with films of molybdenite and pyrite. **Dev:** 40-ft. adit. **Ref:** 122, p. 126.**Addie B (52)****Loc:** Near S. line SE¼ sec. 32, (30-33E), Keller dist. **Elev:** 1,600 ft. **Ore:** Copper, molybdenum, zinc, lead, silver. **Ore min:** Pyrite, chalcopryrite, sphalerite, galena, molybdenite, malachite, azurite. **Gangue:** Quartz, calcite. **Deposit:** Sheared sericitized granite traversed by numerous mineralized quartz veinlets mostly a fraction of an inch wide. **Dev:** 4 adits, inclined shaft, open pits. Longest adit 60 ft. long. **Ref:** 122, p. 123.**Addison (Pacific Mutual) (56)****Loc:** SE¼ sec. 36, (30-33E), SW¼ sec. 31, (30-34E), and NW¼ sec. 6, (29-34E). **Elev:** 2,640 ft. **Access:** 5 mi. NE. of Keller on Silver Cr. road. 35 mi. to railroad at Wilbur. **Prop:** 5 patented claims: Le Roi, Bunker Hill, Federal, Mammoth, Snowstorm; and 5 unpatented claims. **Owner:** Pacific Mutual Silver Lead Co., Spokane, Wash. (1928—). Formerly Addison Copper Co. (1918-1926). **Ore:** Copper, lead, zinc, silver, gold, tungsten. **Ore min:** Galena, chalcopryrite, chalcocite, sphalerite, malachite, azurite, scheelite, wolframite, pyrite, lead carbonate. **Gangue:** Quartz. **Deposit:** 4- to 6-ft. quartz veins inschist. Ore occurs as lenses in 3 veins. One ore shoot is 50 ft. long. Another is 100 ft. **Dev:** About 1,700 ft. included in 2 adits and 6 shafts. **Assays:** 5 channel samples gave tr. to 0.01 oz. Au, 1.4 to 33.8 oz Ag, 0.65% to 3.8% Cu, 2.6% to 19.6% Pb. **Prod:** Small amount of lead, copper, zinc, silver, and gold in 1923. **Ref:** 37, pp. 23-25. 46, pp. 142-143. 69, p. 13. 97, 1923, pp. 411-412; 1924, p. 292. 98, 1920-1926. 104, 8/34; 10/36, p. 27. 106, 3/20; 8/31; 11/32. 108, 1/39, p. 22. 112, 1918, p. 163. 130, p. 91. 141, p. 22. 158.**Advance (40)**

(see under silver)

Albert Hall (26)**Loc:** Sec. 32, (34-36E), Covada dist. **Ore:** Copper. **Ore min:** Copper carbonate. **Gangue:** Quartz, calcite, siderite. **Deposit:** 4-ft. quartz vein contains considerable calcite, some siderite, and a slight wash of copper carbonate. **Dev:** Adit, open cuts. **Ref:** 122, p. 175.**American Granby****Loc:** Curlew dist. **Owner:** Boston-New York Mines (1924-1926). National Lead Silver Mining Co. (1915-1920). **Ore:** Copper, lead, zinc. **Ref:** 98, 1918-1926.**Apollo**

(see California under gold)

Belcher (18)

(see under iron)

Belcher (57)**Loc:** NW¼ sec. 36, (30-33E), ½ mi. N. of Golden Cord mine, Keller dist. **Ore:** Copper, gold, silver. **Ore min:** Chalcopryrite, magnetite. **Gangue:** Epidote, vesuvianite. **Deposit:** Small body of limy argillite slightly copper stained and largely replaced by epidote, vesuvianite, and magnetite. Chalcopryrite sparsely disseminated. **Dev:** Open cut and shaft. **Assays:** Appears to be low grade. **Ref:** 58, p. 6. 122, p. 134.**Big Lake (25)**

(see under lead)

Blevins

(see Meadow Creek)

Blue Bell-Belcher

(see Belcher under iron)

Blue Bird (49)**Loc:** Near center NE¼ sec. 26, (30-32E), Keller dist. **Ore:** Copper. **Ore min:** Chalcopryrite, chalcocite, chrysocolla. **Gangue:** Quartz. **Deposit:** 2-ft. vein of sheared quartz exposed in an open cut for 8 or 10 ft. Wall rock decomposed granite. **Dev:** Open cut. **Assays:** Mass "evidently contains a high percentage of copper." **Ref:** 122, p. 126.**Blue Mountain**

(see Jennie under gold)

Bodie (66)**Loc:** NW¼ sec. 10, (29-33E), 1 mi. E. of Keller. **Ore:** Copper. **Ore min:** Pyrite, chalcocite, malachite. **Gangue:** Breccia, gouge, quartz. **Deposit:** Ore occurs disseminated in a 10-ft. fault zone in andesite underlain by granite. **Dev:** 150-ft. adit with short crosscut and 25-ft. winze. **Ref:** 122, p. 128.**Boston and New York (13)**

(see under silver)

Brimstone

(see Paul and Brimstone under gold)

Cabin

(see Advance under silver)

California (Apollo) (23)

(see under gold)

California (67)

(see also Consolidated Mines and Smelting Co., Ltd.)

Loc: NW¼ sec. 5, (29-33E), Keller dist. **Elev:** 1,900 ft. **Prop:** Several unpatented claims. Part of Consolidated Mines and Smelting Co., Ltd. property. **Owner:** Consolidated Mines and Smelting Co., Ltd., Wenatchee, Wash. (1950). Central Mining Co. (1915). **Ore:** Copper, silver, molybdenum. **Ore min:** Pyrite, chalcopryrite, molybdenite, chalcocite, malachite, molybdenic ocher, powellite. **Gangue:** Quartz. **Deposit:** Numerous sparsely mineralized quartz veinlets in granite. Molybdenite occurs in seams widely scattered in the wall rock. **Dev:** 40-ft. adit (Caledonia), several other short adits and open cuts. **Assays:** Sample representative of several feet of the material exposed in the adit assayed 1% Cu, 2.2 oz. Ag. **Ref:** 122, p. 120. 158.

Campbell (79)

Loc: Near center sec. 30, (29-33E), Keller dist. **Owner:** Dave Campbell (1913). **Ore:** Copper. **Ore min:** Chalcopryrite, pyrite, chrysocolla. **Gangue:** Epidote, garnet, hornblende. **Deposit:** Slightly mineralized silicified shear zone in schist. **Dev:** 140-ft. crosscut. **Ref:** 122, p. 128.

Clay (50)

Loc: Secs. 25 and 26, (30-32E). **Access:** 7 mi. from Keller by road, and 30 mi. from railroad at Wilbur. **Prop:** 4 claims. **Owner:** Mr. Clay, Inchelium, Wash. (1941). **Ore:** Copper, silver, gold, lead, molybdenum. **Ore min:** Molybdenite, pyrite, chalcopryrite, galena. **Deposit:** Said to be a 4-ft. quartz vein. **Dev:** 1,200 ft. of workings on 3 levels. **Ref:** 28, pp. 102-106. 111, p. 9.

Cold Spring (30)

(see under lead)

Comstock (La Fleur) (2)

(see also Walla Walla)

Loc: Near SE. cor. sec. 7, (40-34E). **Elev:** 2,700 ft. **Access:** 2 mi. W. of the Danville-Curlew highway from a place 2 mi. S. of Danville. **Prop:** 8 patented claims and several fractions. Part of La Fleur group. **Owner:** Morning Star Mining Co. (1943—). La Fleur-St. James Mining Co. (1920-1926). Comstock Mining Co. Gold Cup Mining Co. (1938). **Ore:** Copper, silver, lead, zinc. **Ore min:** Chalcopryrite, bornite, galena, sphalerite, tetrahedrite, chalcocite, covellite, pyrite, magnetite, specularite. **Gangue:** Syenite. **Deposit:** Ore minerals occur as concentrations in a 5-ft. syenite dike in metamorphic rocks. **Dev:** 330-ft. adit, 110-ft. shaft, 35-ft. shaft, shallow prospect pits. **Assays:** 3% to 5% Cu across the face of the dike in the shaft. **Ref:** 42, vol. 14, pp. 403-410. 63, p. 108. 98, 1920-1926. 129, pp. 200-201. 158.

Congress (45)

(see under nickel)

Consolidated Mines and Smelting Co., Ltd.

(see also Iconoclast and California under copper, Advance under gold, and Golden Cord under silver)

Loc: Sec. 5, (29-33E), secs. 35 and 36, (30-33E), secs. 12 and 13, (36-32E), Keller dist. **Access:** Roads. **Prop:** Includes Golden Cord, Advance, Silver Ridge, Iconoclast, California properties. **Owner:** Consolidated Mines and Smelting Co., Ltd., Wenatchee, Wash. (1952—). **Ore:** Copper, silver, gold, molybdenum, lead, zinc. **Deposit:** At main property a mineralized fractured zone in granite shows strong silicification with scattered rhodochrosite and pyrite and seams of chalcopryrite and galena and rarely molybdenite along joints and slips. Zone is

exposed for a 2,500-ft length, 200-ft width, and 700-ft. depth, but for the most part it carries only scattered low values. **Dev:** Several thousand feet of underground workings in many separate adits. **Ref:** 28, pp. 67-71. 97, 1938, p. 566; 1939, p. 618. 108, 10/39, p. 32. 150, p. 29. 158.

Copper Key (19)

Loc: Near SE. cor. sec. 7, (37-34E), Belcher dist. **Elev:** 4,650 ft., 4,900 ft. **Access:** About 14 mi. by road NE. of Republic. **Prop:** 7 patented claims. **Owner:** C. M. Trevitt, Republic, Wash. (1941). Copper Key Mining Co. (1907-1915). **Ore:** Copper, iron, gold, silver. **Ore min:** Pyrite, pyrrhotite, magnetite, chalcopryrite. **Deposit:** Ore minerals occur as replacement bodies in limestone. One body is 100 ft. long, 100 ft. wide, and 25 feet thick. In places the ore bodies consist of nearly pure magnetite. **Dev:** 3 levels, 2 upraises, a winze, and a stope total about 2,500 ft. of underground development, 16 diamond drill holes. **Assays:** Unoxidized ores carry from 0.08 to 0.25 oz. Au, 0.14 to 0.46 oz. Ag, and less than 1% Cu. Iron content about 40%. **Prod:** 3,249 tons of oxidized ore shipped in 1907. 7,000 tons prior to 1940. **Ref:** 7, pp. 173-175. 28, pp. 127-131. 33, 1907, p. 518. 48, p. 5. 97, 1910, p. 603. 114, no. 1, 1907, p. 29; no. 5, 1909, p. 71. 116, no. 2, 1908, p. 24. 130, p. 71. 142, pp. 58-59. 166, pp. 32-33.

Copper Prince

(see under silver)

Cougar (76)

Loc: Near center NE¼ sec. 2, (29-32E), Keller dist. **Elev:** 3,100 ft. **Ore:** Copper, silver, gold, zinc. **Ore min:** Chalcopryrite, pyrite, sphalerite. **Gangue:** Quartz, calcite. **Deposit:** Quartz-calcite vein 3 ft. or more wide along a shear zone in granite and quartz porphyry. **Dev:** 200-ft. adit. **Assays:** Sample of the zone assayed 0.02 oz. Au, 3.46 oz. Ag, 1.8% Cu. **Ref:** 58, p. 17. 122, p. 130.

Cuba

(see Big Lake under lead)

Danville

(see under gold)

Delphai

Loc: Danville dist. **Ore:** Copper. **Prod:** 1916. **Ref:** 97, 1916, p. 611.

Dewey (54)

Loc: NE¼ sec. 5 and NW¼ sec. 4, (29-33E), 1 mi. N. of Keller. **Elev:** 1,600 ft. **Prop:** 4 patented claims. **Ore:** Copper. **Ore min:** Pyrite, chalcopryrite, occasional crystal of galena, chrysocolla, native copper, copper sulfate. **Gangue:** Quartz. **Deposit:** Crushed and sericitized granite traversed by innumerable quartz veinlets in which are small proportions of ore minerals. **Dev:** 125-ft. adit, 60-ft. shaft with 40-ft. crosscut at bottom. **Ref:** 122, pp. 119-120. 163, pp. 79-80.

Dick Creek (80)

Loc: Head of Dick Cr., in SE. cor. (29-33E). **Ore:** Copper. **Ore min:** Malachite. **Gangue:** Quartz. **Deposit:** Fair-size quartz veins mostly barren though some show considerable limonite, scattered grains of pyrite, and a little copper stain. **Ref:** 122, pp. 139-140.

Faithful Surprise

(see Morning Star under gold)

Galena (28)

(see under silver)

Gold Crown

(see under silver)

Gold Cup

Loc: Danville dist. **Ore:** Copper. **Prod:** 1939. **Ref:** 97, 1940, p. 477.

Golden Cord (58)

(see under silver)

Grand Forks

Loc: Danville dist. **Ore:** Copper. **Prod:** 1939. **Ref:** 97, 1940, p. 477.

Gray (60)

(see under silver)

Gwin (29)

(see under silver)

Hall Creek

(see Gwin under silver)

Hall Creek Basin (27)

Loc: Sec. 5, (33-36E), on Hall Cr. **Ore:** Copper. **Ore min:** Malachite stain. **Gangue:** Quartz, siderite, chlorite. **Deposit:** Large composite vein consisting chiefly of barren quartz. Here and there a little green discoloration due in part to copper minerals and in part to chlorite. **Dev:** 40-ft. adit and 40-ft. open cut. **Ref:** 122, p. 175.

Handspike (68)

(see also Walla Walla)

Loc: Near center NE¼ sec. 5, (29-33E), Keller dist. **Elev:** 1,800 ft. **Prop:** 1 claim of Walla Walla group. **Owner:** Walla Walla Copper Mining Co. (1915-1924). **Ore:** Copper, molybdenum. **Ore min:** Pyrite, chalcopryrite, molybdenite. **Deposit:** 3-ft. lode of sheared altered granite partly replaced by quartz and ore minerals. **Dev:** 150-ft. adit. **Ref:** 98, 1918-1925. 112, p. 209. 122, p. 118.

Handy Andy (64)

Loc: NE¼ sec. 1, (29-33E), ½ mi. SW. of Summit prospect. **Ore:** Copper. **Ore min:** Chalcopryrite, pyrite. **Gangue:** Quartz. **Deposit:** Lode 6 to 18 in. wide in schist. Lode composed of closely spaced quartz veinlets separated by schist sparsely mineralized. **Dev:** 200-ft. crosscut, inclined shaft said to be 85 ft. deep, and some open pits. **Ref:** 122, p. 132.

Hawkeye (17)

(see under gold)

Hercules (5)

Loc: Near center sec. 9, (40-34E). **Elev:** 1,800 ft. **Access:** 1 mi. S. of Danville by road. **Ore:** Copper. **Ore min:** Pyrite, chalcopryrite. **Gangue:** Quartz, calcite, siderite. **Deposit:** A number of irregular veinlets in serpentine. Some dioritic rock occurs close by. **Ref:** 7, p. 200.

Humboldt (69)

Loc: NE¼NE¼ sec. 5, (29-33E), 1½ mi. above Keller. **Prop:** Several claims. **Ore:** Copper, lead, zinc. **Ore min:** Sphalerite, galena, pyrite, chalcopryrite, rhodochrosite, malachite. **Gangue:** Quartz porphyry. **Deposit:** Granite cut by quartz porphyry dike. Several fractures in the porphyry along a zone 15 ft. wide contain lenticular bunches of ore from 1 to 6 in. wide. **Dev:** 380-ft. adit, open cuts. **Ref:** 46, p. 151. 58, p. 31. 122, pp. 122-123.

Iconoclast (70)

(see also Consolidated Mines and Smelting Co., Ltd.)

Loc: Near center NE¼ sec. 6, (29-33E). **Elev:** 2,450 ft. **Access:** 1¾ mi. NW. of Keller by road. **Prop:** Several unpatented claims. Part of Consolidated Mines and Smelting Co., Ltd. property. **Owner:** Consolidated Mines and Smelting Co.,

Ltd., Wenatchee, Wash. (1940—). Iconoclast Gold & Copper Mining Co. (1902). Iconoclast Consolidated Mines Co. (1908-1918). Tenas Mining Co. (1918-1926). **Ore:** Copper, silver, gold, molybdenum. **Ore min:** Pyrite, chalcopryrite, molybdenite, malachite. **Deposit:** A zone of severely sheared, crushed, bleached, and sericitized granite contains a network of minute mineralized quartz veinlets. Surface indications are that the zone is 150 ft. wide and ¼ mi. long. **Dev:** 250-ft. adit from which a 50-ft. drift and 125-ft. crosscut have been driven. **Assays:** Low-grade ore. Richest portions contain est. 5% pyrite and chalcopryrite together. Sample taken across 60-ft. outcrop assayed tr. Au, 0.4 oz. Ag. **Ref:** 122, pp. 120-121. 158.

Illinois (Oregon) (71)

Loc: SW¼ sec. 5, (29-33E), ½ mi. S. of the California group, Keller dist. **Elev:** 2,100 ft. **Prop:** Several claims. **Owner:** Illinois Copper & Silver Mining & Milling Co. (1915-1926). Illinois Mining & Milling Co. (1908). **Ore:** Copper, molybdenum, zinc, lead, gold, silver. **Ore min:** Pyrite, chalcopryrite, molybdenite, galena, sphalerite. **Gangue:** Quartz, calcite. **Deposit:** Irregular veins and bunches of mineralized quartz in granite and schist. Also sparsely disseminated ore minerals. **Dev:** 500-ft. adit. **Assays:** Body as a whole is low grade. **Ref:** 33, 1908, p. 804. 58, p. 32. 98, 1918-1926. 112, p. 183. 116, no. 4, 1908, p. 91; no. 5, 1908, p. 117. 122, pp. 121-122.

Iron Creek

(see Shamrock under nickel)

Java

(see Sunflower)

Jennie (10)

(see under gold)

Johnny Boy (31)

Loc: SW¼ sec. 31, (32-37E), Covada dist. **Ore:** Copper. **Ore min:** Chalcopryrite, pyrite. **Deposit:** Many small quartz veins in argillite show a little pyrite and chalcopryrite. **Dev:** Explored to "moderate depths." **Ref:** 122, p. 167.

Josie (47)

Loc: E½SW¼ sec. 25, (30-32E), Keller dist. **Prop:** 1 claim: Josie. **Ore:** Copper. **Ore min:** Pyrite, chalcopryrite, specularite. **Deposit:** Shear zone in granite silicified and mineralized. **Dev:** Small pit. **Ref:** 122, p. 126.

Jumper (72)

(see also Walla Walla)

Loc: Near center NE¼ sec. 5, (29-33E), 700 ft. NW. of Handspike, Keller dist. **Elev:** 2,000 ft. **Prop:** 1 claim of Walla Walla group. **Owner:** Walla Walla Copper Mining Co. (1915-1924). **Ore:** Copper, silver, zinc, molybdenum. **Ore min:** Chalcopryrite, pyrite, sphalerite, molybdenite, malachite, copper sulfate. **Deposit:** A 3-ft. lode composed largely of altered granite, but quartz veinlets containing finely divided sulfides are numerous and closely spaced. **Dev:** Open cut. **Assays:** A lenticular mass 6 in. wide from footwall of the lode assayed 7.5% Cu. and 11.4 oz. Ag. Test sample of 1 ton of ore is said to have yielded \$39 in Cu and Ag. **Ref:** 98, 1918-1925. 112, p. 209. 122, pp. 118-119.

Kelly Camp (14)

(see under tungsten)

Keystone (39)

(see under silver)

King Richard

(see Meadow Creek)

Kohler (24)

Loc: NW¼NW¼ sec. 1 and NE¼NE¼ sec. 2, (34-36E), Covada dist. **Elev:** 1,600 ft. **Access:** Paved county road crosses the property. **Prop:** 80 acres of deeded land. **Owner:** Joseph A. Kohler, Impach, Wash. (1949). **Ore:** Copper, antimony. **Ore min:** Tetrahedrite, malachite, azurite, pyrite. **Deposit:** Quartz lenses and stringers with max. thickness of 14 in. exposed for 200 ft. in a limestone bed in the Covada series. **Dev:** 3 small open cuts. **Ref:** 158.

La Fleur

(see Comstock, Walla Walla)

Lancaster (11)

(probably known by an older name also)

Loc: Secs. 5 and 6, (39-34E), 1 mi. N. of Curlew, on E. bank of Kettle R. **Elev:** 1,800 to 2,800 ft. **Access:** Railroad within 700 ft. of portal of main adit. Road to Curlew. **Prop:** 4 claims. **Owner:** Elmer Lancaster, Curlew, Wash., leasing to Ed Kirk and C. D. George, Wallace, Idaho (1943). **Ore:** Copper, lead, zinc, gold, silver. **Deposit:** Chimney-like zones 0 to 3 ft. thick at intersection of fractures in limestone at contact with granite. **Dev:** Main adit 1,490 ft. long with 100 ft. of drifts. Several open cuts and shallow shafts. **Prod:** Carload of 30 tons of hand-sorted ore shipped in 1929 from open cuts assayed 28% Cu, 12% Pb, 13.4 oz. Ag, 0.01 oz. Au. **Ref:** 157. 158.

Last Chance (77)

Loc: Near center sec. 2, (29-32E). **Elev:** 3,000 ft. **Access:** 5 mi. by road from Keller. **Prop:** 2 claims. **Owner:** Bert Summerlin, Keller, Wash. (1943). W. M. Boles, Keller, Wash. (1941). **Ore:** Copper, silver, gold. **Ore min:** Chalcopryrite, pyrite, rhodochrosite. **Gangue:** Calcite. **Deposit:** Roof pendant of schist in granite 65 ft. wide moderately sheared, crushed, and recemented. Sparsely impregnated with ore minerals. **Dev:** 86-ft. upper crosscut with 25-ft. drift, 110-ft. crosscut 100 ft. lower than the upper level. **Assays:** Typical assay said to be 1.4% Cu, 1.2 oz. Ag, tr. Au. **Ref:** 28, pp. 42-46. 122, p. 130.

Laurier

(see Talisman)

Lone Star and Washington (1)

Loc: NW¼ sec. 2, (40-33E), adjacent to international boundary. **Elev:** 3,500 ft. **Access:** 7 to 9 mi. by road W. of railroad at Danville. **Prop:** 8 claims. **Owner:** Attwood Copper Mines, Ltd., Vancouver, B. C. (1953—). Reservation Mining & Milling Co. (1897). British Columbia Copper Co., Ltd. (1908-1918). St. Eugene Mining Co. (1952). **Ore:** Copper, gold, silver. **Ore min:** Chalcopryrite, pyrite, pyrrhotite, chalcocite, malachite. **Gangue:** Quartz, dolomite, calcite. **Deposit:** Chalcopryrite disseminated and in veinlets along foliation of schistose serpentized dacite in zone 50 ft. wide in hanging wall of diabase dike dipping 30 to 50 degrees to the E. and SE. Company records indicated nearly 250,000 tons of ore containing 1.94% Cu, 0.047 oz. Au, 0.204 oz. Ag remained in the ground. **Dev:** 2,500 ft. of drifts, crosscuts, inclines, winzes, and other workings on the Lone Star; less than 700 ft. on the Washington. 3,590 ft. of diamond drill holes. **Assays:** 36,000 tons shipped had av. of 2.6% Cu, 0.032 oz. Au, 0.193 oz. Ag. **Prod:** 1897 (1,700 tons), 1910-1917 (36,000 tons). **Ref:** 7, pp. 197-199. 33, 1908, p. 413. 63, pp. 108-109. 97, 1908, 1911-1917. 157.

Longstreet (41)

(see under silver)

Lucile Dreyfus

(see Morning Star under gold)

Malachite (59)

(see under silver)

Manila (78)

Loc: SE¼SE¼ sec. 3, (29-32E), adjoining Last Chance property. **Elev:** 2,675 ft. to 2,825 ft. **Access:** 7 mi. by road W. of Keller. **Owner:** Mrs. James Le Favre, Spokane, Wash. (1942). Keller & Indiana Consolidated Smelting Co. (1907-1918). Manila Mining & Milling Co. (1915-1924). **Ore:** Copper, silver, gold. **Ore min:** Pyrite, chalcopryrite. **Deposit:** Roof pendants of schist in granite contain sparingly disseminated pyrite and chalcopryrite. These minerals are still more sparsely disseminated in parts of the granite. **Dev:** On 2 levels: upper, 200-ft. crosscut; lower, 700 ft. of drifts and crosscuts, 30-ft. raise, and 50-ft. winze from upper level. 145 ft. between the 2 levels. 604 ft. diamond drill holes. **Assays:** Cu probably less than 1.5%, also tr. Au, 0.5 to 4 oz. Ag. **Prod:** 1,500 tons produced but not smelted (1900's). **Ref:** 7, pp. 185-186. 33, 1907, p. 714; 1908, pp. 837-838. 98, 1918-1925. 112, p. 190. 114, no. 5, 1909, p. 71. 122, pp. 128-130.

Mascot (3)

Loc: Within 1½ mi. of the La Fleur property, Danville dist. **Ore:** Copper. **Ref:** 63, p. 109.

Meadow Creek (King Richard, Blevins, San Poil Monitor) (51)

(probably the same property as Mount Tolman)

Loc: Secs. 25 and 26, (30-32E). **Access:** 30 mi. by road from railroad at Wilbur. **Prop:** 15 claims. **Owner:** Meadow Creek Mining Co., Spokane, Wash. (1949-1951). Explorers, Inc. (1930). **Ore:** Copper, silver, gold, molybdenum, lead, zinc. **Ore min:** Chalcopryrite, chalcocite, molybdenite, pyrite, sphalerite, galena. **Deposit:** Moderately sheared, crushed, and sericitized granite cut by quartz veins and stringers containing sulfides. Sulfides most abundant along footwall. Sulfides sparsely disseminated in granite. **Dev:** 8 adits total 2,103 ft. **Assays:** A sample of the footwall portion of the vein assayed 5% Pb, 4.05% Cu, 27.12 oz. Ag, and small percentage Zn. A grab sample from a large mineralized zone in Pearl adit gave tr. Au, 0.18 oz. Ag, 0.05% Cu, 0.02% Mo. **Ref:** 69, p. 12. 122, pp. 125-126. 133-B, pp. 26-28. 157. 158.

Meteor (37)

(see under silver)

Midnight

(see under silver)

Mineral Hill

(see Morning Star under gold)

Minnehaha (7)

Loc: SE. cor. sec. 23, (40-34E), Danville dist. **Owner:** Boston Consolidated Mining Co. (1908). Mineral Hill Tunnel & Copper Mining Co. (1908). Minnehaha Copper-Gold Mining Co. (1907). **Ore:** Copper. **Prod:** 1903, 1924. **Ref:** 33, 1908, p. 950. 97, 1924, p. 292. 98, 1907, p. 800. 112, p. 191.

Morning Star (6)

(see under gold)

Mount Tolman (53)

(see also Meadow Creek)

Loc: Sec. 31, (30-33E), about 4 mi. NW. of Keller. **Prop:** 39 claims. **Owner:** Mount Tolman Gold Co. (1936). **Ore:** Copper, gold, silver, molybdenum. **Prod:** Operating in 1935, 1936. **Ref:** 104, 11/35, p. 26.

Muldoon

(see under gold)

Nez Perce (43)

(see under lead)

Nez Perce Creek (44)

Loc: SE¼ sec. 20, (31-36E), on Nez Perce Cr. **Ore:** Copper. **Ore min:** Pyrite, chalcopyrite. **Deposit:** 5-ft. quartz vein containing sparsely distributed ore minerals. **Dev:** Pit. **Ref:** 122, p. 176.

Number Seven

(see under silver)

Oregon

(see Illinois)

Oversight (20)

(see under iron)

Pacific Mutual

(see Addison)

Panama (12)

(see under gold)

Patterson

(see Jennie under gold)

Paul and Brimstone

(see under gold)

Pin Money (21)

(see under gold)

Polepick (73)

Loc: NW¼ sec. 5, (29-33E), 1 mi. N. of Keller on E. side of the ridge W. of Sanpoil R. **Elev:** 1,660 ft. **Ore:** Copper, zinc, lead, silver. **Ore min:** Chalcopyrite, sphalerite, galena, subordinate pyrite, and a little tetrahedrite. Molybdenite in some fractures of the granite. **Deposit:** Quartz veins along the contact of granite and porphyry. Veins have total width of several feet and are sparsely mineralized. **Dev:** 700 ft. of workings on one level and some surface cuts. **Prod:** No large shipments reported. **Ref:** 7, pp. 186-187.

Poor Man's Hope (65)

(see under lead)

Quilp (22)

(see under gold)

Railroad (9)

Loc: Sec. 27, (40-36E), Orient dist. **Owner:** Summit Gold & Copper Mining Co. (1908-1909). **Ore:** Copper, gold. **Dev:** 147-ft. incline shaft. **Ref:** 33, 1908, p. 1281. 114, no. 5, 1909, p. 62. 116, no. 5, 1908, p. 117.

Robert E. Lee (42)

(see under antimony)

Rosario (32)

Loc: Near NW. cor. sec. 31, (32-37E), 1 mi. NE. of Covada post office. **Prop:** 1 claim. **Owner:** George Terpening (1912). **Ore:** Copper. **Ore min:** Pyrite, tennantite or tetrahedrite, molybdenite. **Deposit:** Small quartz veinlets in silicified granodiorite. Ore minerals sparsely distributed. **Dev:** 300-ft. adit, short adit, some open pits. **Ref:** 122, p. 169. 163, p. 81.

San Poil Monarch

Loc: Keller dist. **Owner:** Explorers Prospecting Co. (1931). **Ore:** Copper. **Ref:** 106, 4/16/31; 9/17/31, p. 4.

San Poil Monitor

(see Meadow Creek)

Several (35)

(see under lead)

Shamrock (46)

(see under nickel)

Shonee

Loc: Danville dist. **Owner:** Shonee Mining & Milling Co. (1911). **Ore:** Copper, gold, silver. **Prod:** 1911. **Ref:** 97, 1911, p. 785.

Silver Bell (33)

(see under lead)

Silver Hill (61)

Loc: Sec. 6, (29-34E), Keller dist. **Ore:** Copper, silver, gold. **Ref:** 114, no. 5, 1909, p. 69.

Silver King (62)

(see under silver)

Silver Leaf (34)

(see under silver)

Silver Pick

(see under silver)

Skeffington

Loc: Danville dist. **Owner:** Cyprus Mining Co. (1924-1926). **Ore:** Copper. **Ref:** 98, 1925, p. 1813; 1926, p. 1577. 112, p. 175.

Stray Dog (36)

(see under silver)

Summit (63)

(see under zinc)

Sunflower (Java) (38)

Loc: Near S. line sec. 33, (32-36E), 2½ mi. W. of Covada. **Owner:** Syndicate Mining Co. (1915). **Ore:** Copper. **Ore min:** Pyrite, chalcopyrite. **Deposit:** 3½-ft. vein of quartz in schist, argillite, and quartzite. Vein mostly barren but in places slightly mineralized. **Dev:** 450-ft. adit. **Ref:** 122, p. 156.

Talisman (Laurier) (8)

Loc: Sec. 4, (40-36E), on E. slopes of Owl Mtn., 1 mi. S. of international border. **Elev:** 3,400 to 3,600 ft. **Access:** Road and railroad to mill. Tram to mine. **Prop:** 8 unpatented claims. **Owner:** Frank Eichelberger et al., Spokane, Wash., subleasing (1951-1952) from Talisman Mining & Leasing Co., Spokane, Wash., which is leasing (1945-1951) from Glen L. Brink, Charles Moomaw (1915-1952). Laurier Mining Co. (1915-1926). **Ore:** Copper, zinc, silver, lead, tungsten, cadmium, bismuth. **Ore min:** Chalcopyrite, sphalerite, galena, scheelite, pyrite, magnetite. **Gangue:** Shist, epidote, garnet, zoisite. **Deposit:** Low-dipping contact metamorphic deposit in schist. Ore body is 1 to 12 ft. thick. **Dev:** 2,000 ft. of shafts, crosscuts, and drifts. **Improv:** Camp buildings, 75-ton flotation mill, tram (1952). **Assays:** 12 cars totaling 521 tons shipped during World War I gave a net smelter return of \$21 per ton, and av. of 5% Cu, 3 oz. Ag, 4.1% Zn. One ore shoot in 1948 av. 20% Pb, 11% Zn, 2.4 oz. Ag. **Prod:** 1915, \$15,000; 1916, \$36,000; 1946; 1947; 1948, 54 tons conc.; 1949, 37 tons conc.; 1950, 18 tons Zn conc. **Ref:** 7, pp. 201-202. 97, 1917, p. 501; 1919, p. 492. 98, 1918-1926. 106, nos. 7, 12, 1919. 110, 7/48, p. 7. 112, p. 188. 133, p. 40. 157. 158.

Teddy

(see Zipp and Teddy)

Umatilla (74)

(see also Walla Walla)

Loc: Near W. line NE¼ sec. 5, (29-33E), Keller dist. **Elev:** 1,750 ft. **Prop:** 1 claim of Walla Walla group. **Owner:** Walla Walla Copper Mining Co. (1915-1924). Central Mining Co. (1915). **Ore:** Copper, silver, gold. **Ore min:** Chalcopyrite, pyrite. **Deposit:** Innumerable quartz veinlets sparsely mineralized occur in greatly sheared sericitized granite. **Dev:** 350-ft. adit, incline. **Assays:** Sample from crosscut at bottom of incline

representing a width of 14 ft. assayed 2.75% Cu, \$2 Au, \$3 Ag. **Ref:** 98, 1918-1925. **112**, p. 209. **122**, p. 119.

Veda W.

(see under silver)

Virginia

(see Morning Star under gold)

Walla Walla (La Fleur) (4)

(see also Comstock)

Loc: Near SE. cor. sec. 7, (40-34E), 2 mi. W. of the Danville-Curlew highway from a place 2 mi. S. of Danville. **Prop:** 1 claim of the La Fleur group. **Owner:** Charles Rogers, Curlew, Wash. (1954—). La Fleur Mountain Copper Co. (1921). La Fleur-St. James Mining Co. (1920-1926). Morning Star Mining Co., lessee (1943). **Ore:** Copper, gold, silver, platinum. **Ore min:** Chalcopyrite, bornite, pyrite. **Gangue:** Feldspar, sericite. **Deposit:** Ledge composed largely of feldspars which have partially altered to sericite. Ore minerals occur peppered and banded through the ledge. **Dev:** 35-ft. shaft. **Assays:** Several assay certificates report the presence of considerable platinum. **Ref:** 98, 1920-1926. **114**, no. 5, 1909. **129**, pp. 201-202.

Walla Walla (75)

(see also Handspike, Jumper, Umatilla)

Loc: NE¼NE¼ sec. 5, (29-33E), Keller dist. **Elev:** 1,700 ft. **Prop:** 1 of several claims in Walla Walla group. **Owner:** Walla Walla Copper Mining Co. (1915-1924). **Ore:** Copper, lead, zinc, molybdenum, gold. **Ore min:** Pyrite, chalcopyrite, sphalerite, galena, molybdenite. **Gangue:** Quartz, sericite. **Deposit:** Sheared sericitized granite sparsely mineralized, and mineralized quartz veinlets which have been severely crushed. **Dev:** 635-ft. adit from which a 75-ft. crosscut has been driven. (Known as Surprise adit.) **Ref:** 98, 1918-1925. **112**, p. 209. **122**, pp. 117-118.

Washington

(see Lone Star and Washington)

Welcome

(see Boston & New York under silver)

Willmot

Loc: Keller dist. **Owner:** Lorraine Copper Mining Co. (1907-1908). **Ore:** Copper, silver, gold. **Ref:** 33, 1907, p. 752; 1908, p. 888.

Winnipeg (16)

(see under gold)

Yaki

(see Winnepeg under gold)

Zalla M (15)

(see under silver)

Zipp and Teddy (55)

Loc: Near S. line SW¼ sec. 3, (29-33E). **Prop:** 2 patented claims: Zipp, Teddy. **Owner:** Zipp Consolidated Mining & Milling Co. (1901). **Ore:** Copper. **Deposit:** Fault breccia with trend, structure, and composition similar to that of the Bodie, and is probably on a continuation of the same fracture. **Dev:** Shaft, adit. **Ref:** 122, p. 128. **158**.

JEFFERSON COUNTY

Big West

Loc: Jefferson County. **Ore:** Copper. **Ref:** 158.

Elwha

Loc: Jefferson County. **Ore:** Copper. **Ref:** 158.

Tubal Cain (1)

(see under manganese)

KING COUNTY

Aces Up (27)

(see under silver)

Anderson (2)

(see under iron)

Annex (3)

Loc: Secs. 23 and 24, (26-10E), near Lowe Cr. **Owner:** John Maloney, Skykomish, Wash. **Ore:** Copper. **Ref:** 158.

Annie (44)

Loc: NE¼ sec. 2, (23-8E). **Ore:** Copper, gold, silver. **Ore min:** Chalcopyrite, pyrite. **Deposit:** 7-ft. vein. **Assays:** \$28 in Au, Ag. **Ref:** 58, p. 4. **63**, p. 42.

Apex (8)

(see under gold)

Arizona and Washington

(see under gold)

Baring

(see Anderson under iron)

Bear Basin (30)

(see under silver)

Bear Creek

(see Robinson under gold)

Big Chief

(see under gold)

Black Jack

(see under gold)

Bobtail (29)

Loc: NW¼ sec. 31, (25-11E), Miller R. dist. **Ore:** Copper, gold, silver. **Deposit:** 6-ft. vein with 8 to 16 in. of high-grade ore. **Ref:** 63, p. 38. **158**.

Bonanza Queen

(see under gold)

Bondholders Syndicate

(see Apex under gold)

Bridal Veil

(see under gold)

Brooklyn (16)

Loc: Secs. 11 and 13, (25-10E), Miller R. dist. **Ore:** Copper, gold, silver. **Ore min:** Chalcopyrite, pyrite. **Deposit:** 25- and 10-ft. veins with 2- and 4-ft. paystreaks. **Assays:** \$10 to \$20 Au, Ag; 8% to 12% Cu. **Ref:** 63, p. 37.

Brown Bear (52)

Loc: NW¼ sec. 33, (22-10E), across Bear Cr. from Earhart property, Cedar River dist. **Ore:** Copper, silver. **Ore min:** Chalcopyrite, argentite, pyrite, bornite. **Deposit:** 4- to 16-in. quartz vein in granite. **Ref:** 63, p. 47.

Carmack (49)

(see under gold)

Chair Peak

(see Kelley under iron)

Chicago (10)

Loc: Sec. 36, (26-10E), Miller R. dist. **Ore:** Copper. **Ore min:** Chalcopyrite, bornite, native copper, pyrite. **Deposit:** 8-ft. vein in diorite. **Assays:** 20% Cu (1897). **Ref:** 63, pp. 39-40.

Christina

Loc: T. 22 N., R. 10 E., Cedar R. dist. **Ore:** Copper, gold. **Ore min:** Chalcopyrite. **Deposit:** 15-ft. brecciated zone in slate,

filled with ore and quartz. **Assays:** \$6 to \$20 Au; 5% to 75% Cu. **Ref:** 63, p. 48.

Cleopatra (32)

(see under silver)

Cleveland (41)

Loc: SE¼ sec. 25, (24-8E), Snoqualmie dist. **Ore:** Copper, gold. **Ore min:** Chalcopyrite, pyrite. **Deposit:** 20-ft. vein with paystreak on hanging wall. **Assays:** \$40 Au (1897). **Ref:** 63, p. 42.

Climax (7)

Loc: 4½ mi. SW. of Baring on S. end of Little Index Mtn., approx. in sec. 20, (26-10E). **Prop:** 8 claims. **Ore:** Copper, silver. **Ore min:** Bornite, chalcopyrite. **Dev:** 200-ft. adit, surface cuts. **Assays:** 10 tons shipped assayed \$50 to \$100 per ton. **Prod:** 10 tons shipped for a smelter test prior to 1901. **Ref:** 88, pp. 85-86.

Clipper (45)

Loc: Sec. 1, (23-11E), sec. 3, (23-12E), sec. 36, (24-11E), and secs. 27 and 34, (24-12E), on Middle Fk. of Snoqualmie R. **Elev:** 3,000 to 5,800 ft. **Access:** 4 mi. by trail N. of Goldmeyer Hot Springs. **Prop:** 15 patented and 14 unpatented claims, including the old Snoqualmie Copper Co. holdings and Katie Belle claim. **Owner:** M. F. and D. D. Gilbreath of the United Cascade Mining Co., Inc. (1942—). **Ore:** Copper, gold, molybdenum. **Ore min:** Largely pyrite, some chalcopyrite, pyrrhotite, molybdenite. **Deposit:** Cross fractures in granodiorite mineralized with pyrite and some chalcopyrite. **Dev:** Short adit. **Assays:** Highest Cu assay in 7 samples was 0.98% Cu across a width of 5 ft. Other assays show 0.015 to 0.04 oz. Au. **Ref:** 91, 1906, p. 247. 133-B, pp. 28-29. 158.

Commonwealth

(see under silver)

Coney Basin (17)

(see under gold)

Copper Bell

(see under gold)

Copper Chief

Loc: Foss R. dist. **Ore:** Copper. **Ref:** 91, p. 247.

Copper Chief (46)

Loc: SW¼ sec. 14, (23-11E), Snoqualmie dist. **Prop:** 1 claim of a group of 3. **Owner:** Cascade Gold Mining & Milling Co. (1892). **Ore:** Copper, gold, silver, lead. **Ore min:** Chalcopyrite, galena. **Deposit:** Said to be a large body of chalcopyrite ore in several lead-silver veins. **Assays:** Copper ore said to assay as high as \$103 per ton in copper, gold, and silver. Lead-silver ore returned \$50 to \$130 per ton. **Ref:** 13, p. 168. 63, p. 42.

Copper Duke (4)

(see under gold)

Copper Plate

(see Seattle-Cascade under silver)

Damon and Pythias (9)

(see under gold)

Dawson (19)

(see under lead)

Devils Canyon (34)

(see under molybdenum)

Dutch Miller (33)

Loc: NE¼ sec. 20, (24-13E), at head of Middle Fk. of Snoqualmie R. **Elev:** 5,700 ft. **Access:** 12 mi. by trail from Goldmeyer Hot Springs. **Prop:** 2 patented and 5 unpatented claims.

Owner: A. B. Crain, Cascade Development Co., Seattle, Wash. (1942). Dutch Miller Mining & Smelting Co. (1918). **Ore:** Copper, gold, silver. **Ore min:** Chalcopyrite, arsenopyrite, tetrahedrite, pyrite, secondary copper minerals, galena, sphalerite. **Gangue:** Quartz, tourmaline, siderite, pink chlorite. **Deposit:** 3 parallel en echelon veins along shear zones in granodiorite. Ore occurs as a segregation 25 ft. long and 12 ft. thick in one of the veins. **Dev:** 65-ft. adit, 25-ft. adit, and two shafts. **Assays:** Smelter returns av. \$37.65 per ton after deduction of smelter charges. **Prod:** Several shipments prior to 1901. **Ref:** 33, 1907, p. 360. 88, p. 86. 158.

Emma (47)

Loc: Sec. 14, (23-11E), Gold Cr. area. **Ore:** Copper. **Ref:** 58, p. 20. 63, p. 42.

Etta

Loc: E. of Cleopatra Basin, Miller R. dist. **Ore:** Copper. **Ref:** 63, p. 37.

Eureka (53)

Loc: NW¼ sec. 33, (22-10E), Cedar R. dist. **Ore:** Copper, gold, silver. **Ref:** 63, p. 47.

Eureka

Loc: Miller R. dist. **Ore:** Copper, gold, silver. **Ref:** 91, p. 247.

Fathers Day (39)

Loc: Sec. 16, (24-10E), on Quartz Cr. about ¼ mi. above its mouth. **Elev:** 1,600 ft. **Access:** Road up Quartz Cr., thence by trail downhill a few hundred yards. **Prop:** 1 claim. **Owner:** John Jarvis (1950). **Ore:** Copper. **Ore min:** Chalcopyrite, arsenopyrite, pyrite. **Gangue:** Quartz. **Deposit:** A silicified and mineralized zone 10 ft. wide in andesite or fine-grained intrusive rock. **Dev:** 84-ft. adit and open cut. **Ref:** 158.

Foss River (24)

Loc: Sec. 30, (25-12E). **Ore:** Copper, gold, silver. **Ref:** 91, pp. 238-250. 114, no. 6, 1906, p. 79; no. 5, 1909, p. 113.

Geo. W. Tinkle (51)

Loc: Secs. 7 and 8, (22-10E), Snoqualmie dist. **Ore:** Copper. **Deposit:** Similar to Carmack property. **Ref:** 158.

Goat Mountain (36)

(see under lead)

Gold Mountain (5)

(see under silver)

Golden Tunnel (1)

Loc: Sec. 6, (26-11E), near head of Eagle Cr. **Ore:** Copper, gold, silver. **Ref:** 58, p. 25. 63, p. 35.

Hawkeye

(see under gold)

Ironsides

Loc: Cleopatra Basin, Miller R. dist. **Ore:** Copper. **Ref:** 63, p. 37.

Jack Pot (35)

(see under zinc)

Joamco (37)

Loc: Secs. 6, 31, and 32, (25-10E), Buena Vista dist. **Owner:** R. R. Jones, Seattle, Wash. (1941). **Ore:** Copper, Gold. **Ref:** 58, p. 35.

John Stevens

(see Una)

Katie

(see under lead)

Kelley (48)

(see under iron)

King David**Loc:** Summit of Cleopatra Basin, Miller R. dist. **Ore:** Copper. **Ref:** 63, p. 37.**King and Kinney (20)****Loc:** SW $\frac{1}{4}$ sec. 17, (25-11E), on W. side of Miller R. about 5 mi. from its mouth. **Elev:** 400 ft. and 800 ft. above stream. **Access:** Road up Miller R., thence a short distance by trail. **Owner:** Mike Kinney, Skykomish, Wash. (1952). **Ore:** Copper, lead, zinc, silver, gold. **Ore min:** Chalcopyrite, pyrite, galena, sphalerite, malachite. **Gangue:** Quartz. **Deposit:** Fractured and hydrothermally altered brecciated zone in granodiorite in which are mineralized quartz stringers. Zone varies from a few in. to 7 ft. in width. **Dev:** 525-ft. upper adit and a lower adit. **Ref:** 58, p. 37. 158.**Kinney**

(see King and Kinney)

Langer (15A)

(see under zinc)

Last Chance (50)

(see under gold)

Legal Tender (42)

(see under gold)

Lennox (14)

(see under gold)

Le Roi (28)

(see under gold)

Leta (43)

(see under gold)

Little Una

(see under gold)

Lucky Boy**Loc:** Foss R. dist. **Ore:** Copper. **Ref:** 91, p. 246.**Lucky Strike (18)**

(see under gold)

Lynn (21)**Loc:** SE $\frac{1}{4}$ sec. 17, (25-11E), Miller R. dist. **Owner:** Miller River Mining, Milling, & Smelting Co. (1915). **Ore:** Copper, lead. **Ref:** 63, p. 36. 158.**Mastodon**

(see under silver)

May Earhart

(see Robinson under gold)

Middle Fork**Loc:** Along canyon of the Middle Fk. of Snoqualmie R. in vicinity of Burnt Boot Cr. **Access:** Trail. **Prop:** Several prospects. **Ore:** Copper. **Ore min:** Bornite, chalcopyrite. **Gangue:** Quartz. **Deposit:** Copper minerals occur with quartz crystals in pockets in the Snoqualmie granodiorite. **Ref:** 146, p. 14.**Mona**

(see Mono)

Mono (Mona) (6)**Loc:** Sec. 34, (26-11E), on E. side of Miller R. 2 $\frac{1}{2}$ mi. from its mouth. **Access:** 2 $\frac{1}{2}$ mi. by road from railroad at Miller R. **Prop:** 8 claims. **Owner:** Wm. Ellwood, Seattle, Wash. (1952). Cooperative Mining Syndicate (1902). Phoenix Mining Syndicate (1907-1918). **Ore:** Copper, gold, silver, zinc, arsenic. **Ore min:** Arsenopyrite, chalcopyrite, bornite, sphalerite, pyrite.**Gangue:** Apatite, quartz. **Deposit:** Mineralized zone 40 to 54 ft. wide in Keechelus andesite. **Dev:** 3 adits, one 716 ft. long, another 250 ft. long, and another 80 ft. long from which a 90-ft. drift and 52-ft. winze have been driven. **Assays:** Av. about 4% Cu, \$1.25 Au, \$1.75 Ag. **Ref:** 33, 1907, p. 925; 1908, p. 1120. 46, p. 163. 63, p. 38. 88, p. 84. 98, 1918, p. 121. 112, p. 112. 130, p. 59. 147, pp. 184-185. 159, p. 135.**Monte Carlo (12)**

(see under gold)

Mount Phelps (13)

(see under zinc)

Online (56)

(see under gold)

Pedro**Loc:** Foss R. dist. **Ore:** Copper, gold, silver, bismuth, antimony. **Ref:** 91, p. 246.**Portland (25)****Loc:** Sec. 20, (25-11E), Miller R. dist. **Ore:** Copper. **Ref:** 114, no. 5, 1909, p. 112. 147, pp. 154-185.**Pythias**

(see Damon and Pythias under gold)

Quartz Creek (38)

(see also Rainy under gold)

Loc: Sec. 8, or sec. 16, (24-10E), Taylor R. dist. **Access:** 18 mi. by road from railroad at North Bend. **Prop:** Patented claims. This appears to be the same property which is described under the name "Rainy" under gold. **Ore:** Copper, gold, silver. **Ore min:** Chalcopyrite, pyrite, arsenopyrite, bornite, molybdenite, scheelite, covellite. **Gangue:** Quartz, tourmaline. **Deposit:** Disseminations and replacement in granodiorite breccia. Massive pyrite body 30 ft. in diameter in altered zone 200 ft. by 40 ft. containing also chalcopyrite; 800 ft. W. is a 200-ft. by 100-ft. stockwork zone of quartz veinlets containing arsenopyrite, chalcopyrite, and a little molybdenite; 800 ft. N. in road cut is a 40-ft.-wide sheeted zone with fracture planes lined with chalcopyrite, arsenopyrite, a little molybdenite and scheelite. **Dev:** 50-ft. adit with 40-ft. winze, caved adit, 80-ft. adit. **Improv:** 50-ton flotation mill (1953). **Assays:** One sample showed 0.6% Cu, 0.2 oz. Ag, tr. Au; another sample showed 1.2% Cu, 0.4 oz. Ag, 0.04 oz. Au. **Ref:** 11-A, pp. 233-240. 108, 2/53, p. 103. 111, p. 5.**Rainbow (15)****Loc:** NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 17, (25-10E), on S. side of Lennox R., Buena Vista dist. **Elev:** 2,460 ft. **Access:** $\frac{1}{2}$ mi. by trail from road. **Prop:** 9 unpatented claims. **Owner:** Edwin Sauers and C. L. Johnston, Bremerton, Wash. (1947). **Ore:** Copper. **Ore min:** Chalcopyrite, pyrrhotite. **Deposit:** Iron-stained quartz vein in granite is 6 in. wide and 50 to 75 ft. long. **Improv:** Cabin (1947). **Ref:** 11-A, pp. 231-233. 158.**Rainy (40)**

(see under gold)

Robinson (54)

(see under gold)

Romeo

(see under gold)

San Francisco (11)

(see under gold)

San Jose (55)

(see under gold)

Seattle-Cascade (22)

(see under silver)

Silver Dollar and Copper Plate

(see Seattle-Cascade under silver)

Snoqualmie (31)

Loc: Secs. 14 and 23, (25-10E), Miller R. dist. **Owner:** Cascade Consolidated Mining & Smelting Co. (1934). Snoqualmie Mining Co., Inc. (1908-1926). **Ore:** Copper. **Ore min:** Chalcopryrite, pyrite. **Deposit:** Low grade. Gash veins in granodiorite. Some high-grade ore from No. 6 vein. **Dev:** Numerous openings. **Prod:** 1925. **Ref:** 33, 1908, p. 1244. 97, 1925, p. 558. 98, 1925, p. 1833; 1926, p. 1595. 114, no. 5, 1909. 141, p. 22. 158.

Sphinx

Loc: Cleopatra Basin, Miller R. dist. **Ore:** Copper. **Ref:** 63, p. 37.

Square Deal

(see under gold)

Stevens

(see Una)

Sunday

(see under silver)

Surprise

Loc: Snoqualmie dist. **Owner:** Horseshoe Mining Co. (1907-1909). **Ore:** Copper, gold, silver. **Ref:** 33, 1908, p. 794. 105, vol. 98, 1909, p. 680. 116, no. 7, 1907, p. 13.

Tinkle

(see Geo. W. Tinkle)

Triple S

(see Seattle-Cascade under silver)

Twin Lakes

(see under gold)

Una (John Stevens) (23)

Loc: Sec. 17, (25-11E), on Miller R. **Access:** 5½ mi. by road to railroad at Berlin. **Owner:** Consolidated Gold Mines Co. (1908-1909). **Ore:** Copper, silver, gold. **Ore min:** Malachite. **Gangue:** Tourmaline. **Deposit:** 20-ft. body of tourmaline is stained by malachite. **Dev:** 130-ft. adit. **Prod:** 1908. **Ref:** 33, 1908, p. 555. 63, p. 38. 97, 1908, p. 578. 114, no. 5, 1909, p. 112. 147, p. 184.

Unicorn

Loc: Cleopatra Basin, Miller R. dist. **Ore:** Copper. **Ref:** 63, p. 37.

Victoria

(see under gold)

War Eagle (26)

(see under gold)

Washington

(see Arizona and Washington under gold)

Western States Copper

(see Rainy under gold)

Woodline (57)

(see under gold)

KITSAP COUNTY**Chico (1)**

(see under tin)

Cook-Kitchen

(see Chico under tin)

Kitchen

(see Chico under tin)

KITTITAS COUNTY**Aurora (1)**

(see under gold)

Beaver (5)

(see under gold)

Big Bug

Loc: On Fortune Cr., Cle Elum dist. **Ore:** Copper, silver. **Ref:** 63, p. 63.

Big Dome (15)

Loc: Sec. 17, (23-15E) and sec. 13, (23-14E), on Fortune Cr. **Access:** 27 mi. by road from railroad at Roslyn. **Prop:** Several claims. **Owner:** Big Dome Mining Co., Inc., Seattle, Wash. (1949—). **Ore:** Copper, tungsten, reportedly uranium. **Ore min:** Chalcopryrite, scheelite, pyrite. **Gangue:** Granodiorite. **Deposit:** Irregular zones of chalcopryrite and pyrite disseminated in granodiorite. **Dev:** 20-ft. adit, several open cuts. **Improv:** Cabin (1950). **Assays:** Only trace amounts of radioactivity. **Ref:** 69, p. 6. 150, p. 28. 156. 158.

Blue Bonnet (8)

Loc: SE¼ sec. 25, (23-14E), Camp Cr. area. **Owner:** Riley Williams et al., Yakima, Wash. (1952—). **Ore:** Copper, nickel, gold, silver. **Ref:** 133, p. 30.

Bob Canson (6)

Loc: NE¼NE¼ sec. 26, (23-14E). **Access:** Trail. **Owner:** Bob Canson Mining Co. (1938). **Ore:** Copper. **Ore min:** Arsenopyrite, pyrite, a little chalcopryrite. **Deposit:** Mineralized shear zone about 8 in. wide along contact of gray and green volcanic rocks. **Dev:** 70-ft. adit, 90-ft. adit, and an open cut. **Improv:** Cabin (1938). **Ref:** 158.

Bonanza

(see Dolphin)

Boyles (10)

Loc: Sec. 31, (23-15E), Cle Elum dist. **Ore:** Copper, gold, silver. **Ref:** 58, p. 10. 63, p. 64.

Canson

(see Bob Canson)

Cascade Mining (18)

Loc: Near N. line sec. 27, (23-12E), below prominent bench in cirque at head of Gold Cr. **Elev:** 3,800 ft. **Access:** About 6 mi. by trail up Gold Cr. from Snoqualmie Pass highway. **Prop:** 2 patented claims. **Owner:** E. A. Magill, Seattle, Wash. (1951—). Cascade Mining Co. (1906). **Ore:** Copper, lead, silver, gold. **Deposit:** Vein mineralized with lead, silver, copper, and gold, and a wide zone of mineralized granodiorite exposed in the crosscut carries a small percentage of copper. **Dev:** Crosscut adit and a shaft. **Ref:** 146, p. 14. 158.

Copper King

Loc: Cle Elum dist. **Ore:** Copper. **Ref:** 33, 1907, p. 617; 1908, pp. 706-707. 97, 1905, p. 336.

Copper Queen (20)

Loc: Sec. 7, (22-13E), ½ mi. S. of Mineral Cr. near the Mineral Creek mine. **Elev:** 3,500 to 3,820 ft. **Owner:** Cascade Gold Mining & Milling Co. (1952). Mineral Creek Copper Co. (1917-1928). **Ore:** Copper. **Ore min:** Pyrite, chalcopryrite. **Deposit:** Mineralized zones in rhyolite breccia. The greatest lateral dimension of a zone is 40 ft. Believed to be a low-grade deposit. **Dev:** 550-ft. crosscut, 230-ft. crosscut, 65-ft. crosscut. **Assays:** Low copper content. **Ref:** 98, 1922-1926. 129, p. 278. 133, p. 31.

Dolphin (Bonanza) (13)

Loc: Sec. 33, (23-15E), on SE. slope of Mt. Hawkins. **Elev:** 5,800 ft. **Access:** 27 mi. by road to railroad at Ronald. **Owner:** Phil Denny, Seattle, Wash. (1951). Gallagher Mining & Development Co. (1905). Gallagher Mining & Milling Co. (1907-1908). Bonanza Mining Co. (1920). **Ore:** Copper, silver, gold, cobalt reported. **Ore min:** Copper and iron sulfides. **Deposit:** Silicified zone up to 50 ft. wide in serpentine. **Dev:** 300-ft. Dolphin adit, 1,000-ft. drift, 75-ft. adit, 100-ft. shaft. **Assays:** 5 tons shipped from Dolphin adit reported to av. 6% Cu. **Prod:** 1905, 1917 (5 tons). **Ref:** 33, 1907, p. 617; 1908, pp. 706-707. 97, 1905, p. 336; 1917, p. 502. 157.

Durrwachter

(see Mineral Creek)

Fish Eagle

Loc: Fish Lk. area. **Ore:** Copper. **Ref:** 58, p. 22. 63, p. 62.

Grandview (Lost) (14)

Loc: Sec. 33, (23-15E), about $\frac{3}{4}$ mi. E. of Fourth Cr. **Access:** $3\frac{1}{2}$ mi. by trail and 25 mi. by road to railroad at Cle Elum. **Owner:** L. H. West, Cle Elum, Wash. (1948). **Ore:** Copper, gold, nickel. **Ore min:** Native copper. **Deposit:** Slightly mineralized sheer zone in peridotite. **Ref:** 58, p. 27. 144, p. 9. 157.

Granite King (21)

(see under silver)

Grizzly Bear

(see under gold)

Huckleberry (17)

Loc: Secs. 24 and 26, (23-13E), near Lk. Cle Elum, on Mt. Hawkins. **Prop:** 4 claims. **Owner:** S. R. Justham, Seattle, Wash. (1943). **Ore:** Copper, silver, gold. **Gangue:** Quartz. **Deposit:** Vein said to be 8 in. to 4 ft. wide. **Dev:** 600-ft. adit. **Assays:** 14 assays show \$0.06 to \$3.72 Au, \$0.15 to \$26.10 Ag, \$0.55 to \$24.20 Cu. **Prod:** Reportedly 4 carloads shipped to the Tacoma smelter prior to 1935. **Ref:** 13, p. 135. 63, p. 62. 158.

Iias (Williams) (11)

Loc: SW $\frac{1}{4}$ sec. 29, (23-15E), on W. slope of Mt. Hawkins, on N. side of Camp Cr. **Elev:** 5,900 ft. **Access:** $2\frac{1}{2}$ mi. up Camp Cr. trail from the Cle Elum R. road. 24 mi. to Cle Elum. **Prop:** 1 patented claim: Iias; and 1 unpatented claim: Iias Extension. **Owner:** Riley Williams, Yakima, Wash. (1949—). **Ore:** Silver, gold, copper. **Ore min:** Chalcopryrite, pyrrhotite, magnetite. **Gangue:** Quartz. **Deposit:** At creek level are small pods of sulfides in lenticular shear zones in serpentine. Silicified zone in altered volcanic rocks is 20 ft. wide and 500 ft. long. Mineralization negligible. One quartz vein in the zone is 2 ft. wide. **Dev:** 17-ft. shaft, 51-ft. adit now caved, 28-ft. adit, 112-ft. adit, long open cut. **Assays:** Low values in copper at creek level. Of three assays at different points along the vein, two showed nothing and one showed tr. Au, 0.12 oz. Ag. **Ref:** 63, p. 64. 158.

Johnson

Loc: Near Mt. Hawkins, Cle Elum dist. **Ore:** Copper. **Ref:** 63, p. 64.

King Solomon (2)

Loc: Sec. 5, (23-15E), Cle Elum dist. **Ore:** Copper, gold, silver. **Ref:** 58, p. 37.

Last Chance

(see under gold)

Legal Tender

Loc: Cle Elum dist. **Owner:** Gallaher Mining & Milling Co. (1907-1908). **Ore:** Copper, silver, gold. **Ref:** 33, 1907, p. 617; 1908, pp. 706-707. 97, 1905, p. 336.

Liberty Lode

(see Mineral Creek)

Little Kachess Lake

Loc: 2 mi. NW. of Little Kachess Lk. on creek which empties into N. end of the lake. **Elev:** 2,500 to 4,000 ft. **Access:** 6 mi. by trail from Kachess Forest Camp at N. end of Kachess Lk. **Prop:** Several claims. **Ore:** Copper. **Ore min:** Pyrite, chalcopryrite, bornite, arsenopyrite. **Gangue:** Quartz, epidote. **Deposit:** Poorly defined veins in schist, sandstone, slate, and granodiorite. **Ref:** 146, p. 14.

Lost

(see Grandview)

Lynch

(see Aurora under gold)

Majestic

(see under gold)

Mammoth

(see under gold)

Mary

(see under gold)

Mildred

Loc: Snoqualmie dist. **Owner:** Devine Mining Co. (1915). **Ore:** Copper, lead, gold, silver. **Ref:** 158.

Mineral Creek (Durrwachter, Liberty Lode) (19)

Loc: SE $\frac{1}{4}$ sec. 6, (22-13E), on Mineral Cr. 2 mi. above Little Kachess Lk. **Elev:** 2,850 ft. **Access:** 2 mi. by road up Mineral Cr. from Little Kachess Lk. **Prop:** 8 claims and 6 millsites. **Owner:** Cascade Gold Mining & Milling Co., Spokane, Wash. (1951—). Mineral Creek Copper Co. (1917-1926). **Ore:** Copper, gold, silver. **Ore min:** Chalcopryrite, pyrite, bornite, molybdenite, pyrrhotite. **Gangue:** Quartz. **Deposit:** Ore minerals occur along narrow shear and joint planes in a 20- to 40-ft. brecciated zone in granodiorite. Also a 500-ft.-wide mineralized breccia contact zone between rhyolite and basalt. **Dev:** 248-ft. adit with 50-ft. winze; 3 other adits totaling several hundred ft. **Assays:** Sample taken across 10 ft. gave 2.75% Cu, 1 oz. Ag, 40¢ Au. A carload of crude ore shipped reportedly av. 6% Cu. **Prod:** 20 tons shipped to Tacoma smelter prior to 1920. **Ref:** 97, 1917, p. 502; 1922, p. 254. 98, 1922-1926. 106, no. 15, 1920, p. 5. 129, pp. 277-278. 133, p. 31. 141, p. 22. 158.

Morning Star (9)

Loc: Sec. 24, (23-14E), Cle Elum dist. **Ore:** Copper, gold, silver. **Ref:** 58, p. 46. 63, p. 65.

Mountain Belle (3)

Loc: Extension of Mountain Chief, 1 mi. above mouth of Fortune Cr., Cle Elum dist. **Ore:** Copper, gold. **Ref:** 63, p. 63.

Mountain Chief (4)

Loc: 1 mi. above mouth of Fortune Cr., Cle Elum dist. **Ore:** Copper, gold. **Ref:** 63, p. 63.

Navidad

Loc: Cle Elum dist. **Owner:** Gallaher Mining & Milling Co. (1907-1908). **Ore:** Copper, gold, silver. **Ref:** 33, 1907, p. 617; 1908, pp. 706-707.

Paramount

(see Aurora under gold)

Ruby King

(see under gold)

Silver Bow

Loc: On Mt. Hawkins, Cle Elum dist. **Owner:** Ben Kelly and Judge Boyles (1892). **Ore:** Copper, gold. **Deposit:** 4-ft. vein. **Dev:** 30-ft. incline. **Assays:** 22½% Cu, \$26 Au. **Ref:** 13, p. 135.

Silver Bullion (12)

Loc: W½ sec. 32, (23-15E), near head of Boulder Cr. **Access:** 2½ mi. by trail from Cle Elum R. road at mouth of Camp Cr. **Prop:** 1 claim. **Owner:** Riley Williams, Yakima, Wash. (1949). **Ore:** Copper. **Ore min:** Magnetite, chalcopryrite, chalcocite. **Gangue:** Serpentine. **Deposit:** Serpentine containing disseminated magnetite in which are scattered crystals of chalcopryrite. **Dev:** 168-ft. shaft. **Assays:** Ore minerals constitute about 3% of the rock. **Ref:** 158.

Silver Dump (7)

(see under silver)

Taneum Creek (22)

Loc: In vicinity of the forks of Taneum Cr., 5 mi. S. of Cle Elum. **Ore:** Copper. **Ore min:** Copper sulfides. **Deposit:** Easton schist seamed with quartz. **Ref:** 144, p. 9.

Teanaway (16)

(see under nickel)

Thorp

(see under gold)

Tip Top

(see under gold)

Tip Top No. 1

(see under gold)

Twin

(see under gold)

Whippoorwill

(see under gold)

Williams

(see Iias)

LEWIS COUNTY**Big Falls (3)**

Loc: Secs. 28 and 32, (11-5E), Mt. St. Helens dist. **Ore:** Copper. **Ref:** 158.

Eagle Peak (1)

Loc: Near NW. cor. sec. 27, (15-8E), on W. slope of Eagle Peak, Mt. Rainier area. **Elev:** 3,275 to 3,515 ft. **Access:** 1½ mi. by road above Longmire. 18 mi. to railroad at Ashford. 60 mi. by road to smelter at Tacoma. **Prop:** 2 unpatented claims: Aldula, Paradise. **Owner:** Eagle Peak Copper Mining Co., R. H. Wheelock, Ashford, Wash. (1908—). **Ore:** Copper, gold, silver, cobalt, uranium (?). **Ore min:** Chalcopryrite, pyrite, bornite, arsenopryrite, covellite, scheelite, molybdenite, sphalerite, linnaeite. **Deposit:** Mineralized joints or slip planes in granite. One zone is 6 in. to 5 ft. in width and carries a streak of high-grade ore 1 to 14 in. wide. Gold values are in the arsenopryrite. Ore from near portal of old drift about 15 ft. above present drift level was slightly radioactive. **Dev:** 300-ft. drift, 630-ft. crosscut. **Assays:** 18-ton shipment yielded 8.05% Cu, 0.09 oz. Au, 1.87 oz. Ag. 1% to 5% Co in some samples. **Prod:** 100 tons in 1919. Produced also 1925, 1928. Not over 200 tons total. **Ref:** 58, p. 19. 97, 1919, p. 493; 1925, p. 559; 1928, p. 701. 98, 1918-1926. 129, pp. 310-312. 157.

Green River (5)

Loc: NW¼ sec. 33, (11-5E), Mt. St. Helens dist. **Prop:** 2 claims (part of Big Falls group). **Ore:** Copper. **Ref:** 158.

Paradise (2)

Loc: Sec. 27, (15-8E), adjoining Eagle Peak property on the S., Mt. Rainier dist. **Access:** 2,400 ft. E. of Mt. Rainier highway above Longmire. **Prop:** 2 unpatented claims: Iva Henry Nos. 1 and 2. **Owner:** Paradise Mining Co. (1918-1921). **Ore:** Copper. **Ore min:** Chalcopryrite, bornite, arsenopryrite, pyrite. **Gangue:** Quartz, calcite. **Deposit:** Mineralized slip plane in andesite carries 4 to 8 in. of ore and minor parallel streaks of ore. **Dev:** 440-ft. adit, short drift, and open cut. **Improv:** 2,400-ft. aerial cable. (1921). **Assays:** 40-ton shipment said to assay 10% Cu. **Prod:** Reportedly 40 tons shipped prior to 1921. **Ref:** 97, 1918, p. 506. 129, p. 312.

Rocky Point (4)

Loc: SE¼ sec. 31, (11-5E), Mt. St. Helens dist. **Prop:** 6 claims: Rocky Point Nos. 1 to 6. **Ore:** Copper. **Ref:** 158.

Short Canyon

Loc: Mt. Rainier area. **Owner:** Short Canyon Mining Co. (1915). **Ore:** Copper, molybdenum. **Prod:** 1911. **Ref:** 158.

LINCOLN COUNTY**Crystal (1)**

(see under lead)

Fouress (3)

(see under zinc)

Heart (4)

Loc: Sec. 20, (26-38E), 5 mi. NW. of Mondovi. **Owner:** Heart estate leasing to C. W. Minnick, Medical Lake, Wash. (1943). **Ore:** Copper. **Ore min:** Copper carbonate (stains only). **Deposit:** Quartz pegmatite dike in argillite. Within an exposed distance of several hundred ft. the dike pinches and swells several times within the range of 0 to 4 ft. "Ore" consists of copper-stained quartz, feldspar, and mica. **Dev:** 10-ft. shaft. **Ref:** 157.

Iron Crown

(see under gold)

Lincoln (2)

Loc: NE¼SE¼ sec. 20, (28-36E), 1 mi. up Spokane R. from military buildings. **Owner:** Lincoln Mining & Milling Co. (1939). **Ore:** Copper, lead. **Ore min:** Pyrrhotite, chalcopryrite, pyrite, galena. **Gangue:** Dolomite, actinolite, tremolite. **Deposit:** Mineralized zone along contact of granite with dolomite. **Ref:** 158.

Pitney Butte

(see Fouress under zinc)

Silver Queen

(see under silver)

MASON COUNTY**Arkansas Traveler (3)**

(see under manganese)

Black Tail (1)

Loc: Sec. 9, (24-5W), 2 mi. N. of Black and White property. **Ore:** Copper. **Ore min:** Chalcopryrite. **Gangue:** Calcite. **Ref:** 124, p. 240.

Black and White (2)

Loc: Sec. 17, or NW¼ sec. 21, (24-5W), on divide E. of N. Fk. Skokomish R. **Elev:** 4,250 ft. **Access:** 5-mi. trail from Cushman Lk. road. **Owner:** Olympic Mines, Inc. (1943). **Ore:** Copper, manganese. **Ore min:** Bementite, neotocite, native copper, cuprite, rhodonite, rhodochrosite, manganocalcite, chal-

cocite, chalcotrichite, malachite, azurite. **Gangue:** Jasper. **Deposit:** 3 lenses of ore along altered basalt-phyllite graywacke contact. 1 lens has max. width of 8 ft. but pinches and swells. **Dev:** 200-ft. adit, 40-ft. shaft, and several open cuts and pits. **Assays:** 5-ton shipment contained 0.40 oz. Ag, 7.85% Cu, 3.2% Fe, 65% insol. Composite sample of 125 tons contained 5.63% Cu, 0.12% Ni and Co, 19.72% MnO, 7.44% Fe₂O₃, 3.84% CaO, 5.15% H₂O, 57.2% insol., tr. Zn and Mg. **Prod:** 5.012 dry tons of ore 1915. **Ref:** 48-A, pp. 40-41. 94, p. 23. 124, pp. 239-240. 127, pp. 453-454. 141, pp. 81, 83. 158.

OKANOGAN COUNTY

Abernathy (Antimony Gold) (144)

Loc: Sec. 31, (35-19E), ¼ mi. NW. of Abernathy Peak. **Elev:** 7,500 ft. **Access:** About 5 mi. by trail from Gilbert at the terminus of the Twisp R. road. **Owner:** R. Abernathy, Los Angeles, Calif. (1946). **Ore:** Copper, gold, silver. **Ore min:** Chalcopyrite, arsenopyrite, pyrite. **Gangue:** Quartz. **Deposit:** A 6-ft. shear zone in andesite is bounded on each side by quartz veins up to 14 in. wide. **Dev:** 40-ft. drift, shaft, and an open cut. **Assays:** 0.3 to 1.0 oz. Au. **Ref:** 158.

Adams

(see Moncosilgo)

Alder (190)

(see under gold)

Alta Lake (224)

(see under nickel)

American Flag (86)

Loc: NE¼ sec. 36, (38-31E), Wauconda dist. **Elev:** 4,500 ft. **Access:** 13 mi. by road NW. of Republic. **Prop:** 1 claim. **Owner:** American Flag Mining Co. (1926). **Ore:** Copper, silver, gold, zinc. **Ore min:** Chalcopyrite, bornite, sphalerite, pyrite, argentite, malachite. **Gangue:** Quartz, fluorite. **Deposit:** Ore occurs in a highly silicified zone 2 to 8 ft. wide in phonolite. Ore minerals occur as shoots in the zone. One such shoot was 16 ft. long. **Dev:** 97-ft. drift in which is a 97-ft. winze. **Assays:** smelter certificates for two 30-ton shipments show an av. of 36% Cu, 16 oz. Ag, 0.10 oz. Au. **Prod:** Shipped 60 tons about 1918. **Ref:** 46, pp. 172-173. 97, 1905, p. 336; 1918, p. 506. 98, 1922-1926. 106, 3/5/31. 129, pp. 196-198.

American Flag (137)

(see under gold)

American Rand

(see Spokane under gold)

Anaconda (44)

(see under gold)

Anchor (117)

(see under silver)

Andy O

(see Andy O'Neil under silver)

Andy O'Neil (113)

(see under silver)

Anna (108)

(see under silver)

Anna B.

(see Ironsides and Anna B.)

Antimony Gold

(see Abernathy)

Antimony Queen (198)

(see under antimony)

Apache (118)

(see under silver)

Apex (Ben Harrison) (65)

Loc: Near SW. cor. sec. 17, (40-30E). **Access:** ½ mi. N. of Chesaw. **Prop:** 6 claims. **Owner:** Apex Gold Mining Co. (1911-1926). Ben Harrison Gold & Copper Mining Co. (1908-1918). British Columbia Copper Co. (1908 and 1916). **Ore:** Copper, gold, silver. **Ore min:** Chalcopyrite, pyrite, lesser amounts of galena and sphalerite. **Deposit:** Quartz vein as much as 6 ft. wide enclosed in schist and quartzite. Ore occurs in joints and crevices in the quartz. **Dev:** 286-ft. inclined shaft, several small surface openings. Short drifts and a crosscut at bottom of the shaft. **Assays:** Carefully hand-sorted ore said to run about 2 oz. Au. Gold occurs in the pyrite and chalcopyrite. **Ref:** 33, 1908, p. 413. 98, 1918, 1922. 112, 1918, p. 166. 154, p. 49.

Arizona

(see Horn Silver under silver)

Arlington (182)

(see under silver)

Auberton

(see Windiate-Auberton under tungsten)

Aztec (72)

(see under iron)

Baltimore (42)

(see under gold)

Bellevue (49)

(see under gold)

Ben Harrison

(see Apex)

Bergman

(see Shaw-Bergman)

Billy Goat (3)

Loc: Near SE. cor. sec. 15, (38-20E), on S. slope of Billy Goat Mtn., NW. of Winthrop. **Elev:** 4,500 to 5,300 ft. **Access:** Road up Eightmile Cr. 80 mi. from railroad at Pateros. **Prop:** 4 claims: Billy Goat and Billy Goat Nos. 2 to 4. **Owner:** W. F. Berge, R. E. Johnson, Clint Hanks, Fred Hasse, and Mrs. Charles (Della) Graff (1946). **Ore:** Copper, gold, silver, zinc, molybdenum, lead. **Ore min:** Molybdenite, pyrite, chalcopyrite, sphalerite, galena, tetrahedrite. **Gangue:** Quartz, ankerite. **Deposit:** Mineralized quartz veinlets ¼ in. to 2 in. wide lace through altered volcanic rock. A large area is mineralized. **Dev:** Three shafts 20, 40, and 60 ft. deep; three adits 60, 15 ft., and one of unknown length; and a 700-ft. drift. **Assays:** Copper generally less than 1% but in places as much as 2% over minable widths. Gold also low but as much as 0.5 oz. per ton in places. **Ref:** 46, p. 176. 104, 8/30/34, p. 22. 106, 7/34. 158.

Bi-Metallic (84)

(see under molybdenum)

Black Bear (38)

(see under gold)

Black Huzzar

(see under silver)

Black Jack (200)

(see under gold)

Black Warrior

(see under gold)

Blue Grouse (172)

(see under lead)

Blue Lake (151)

Loc: SW $\frac{1}{4}$ sec. 21, (37-25E), on E. side of northward-trending ridge from Goat Mtn. **Elev:** 3,100 ft. **Prop:** 20 claims. **Owner:** Blue Lake Gold and Copper Mining, Smelting, & Power Co. (1902-1908). **Ore:** Copper, gold. **Ore min:** Chalcopryrite. **Deposit:** Several small quartz stringers in granodiorite contain a little chalcopryrite. **Dev:** 300-ft. adit in granodiorite. **Assays:** 5,000 tons assayed \$3 to \$11 Au, 3% to 49% Cu. **Prod:** 5,000 tons taken out in 1901. **Ref:** 33, 1908, p. 384. 75, p. 35. 88, p. 33.

Bolinger (199)

(see under gold)

Bonanza (88)

Loc: Sec. 1, (34-31E), Park City dist. **Owner:** Harry Crounse (1913). **Ore:** Copper. **Ore min:** Pyrite, chalcopryrite, malachite. **Deposit:** Argillite and schist cut by irregular quartz vein. One vein is of white quartz 20 ft. wide showing a sulfide grain here and there. **Ref:** 122, p. 102.

Bornite

(see Peacock)

Buckeye (43)

Loc: Sec. 26, (39-26E). **Prop:** 1 claim. **Owner:** A. M. Wehe, Wehesville, Wash. (1911). **Ore:** Copper, lead, gold, silver. **Ore min:** Pyrite, chalcopryrite, galena, occasionally stephanite. **Deposit:** Vein about 1 ft. wide enclosed in quartzite and siliceous schist. **Dev:** Minor. **Assays:** Gold said to predominate over silver. **Ref:** 154, p. 102.

Buckeye

(see under silver)

Buckhorn

(see Magnetic under iron)

Bunker Hill

(see Silver King under lead)

Caaba

(see Kaaba under lead)

California (13)

Loc: Sec. 23, (40-25E), near S. base of Little Chopaka Mtn., Nighthawk dist. **Prop:** 1 claim. **Ore:** Copper, lead, zinc. **Ore min:** Chalcopryrite, bornite, pyrite, sphalerite, galena, malachite, limonite. **Gangue:** Quartz, garnet. **Deposit:** 6- to 12-ft. quartz vein in granite. Ore minerals occur as patches in the quartz and are arranged with a degree of parallelism. **Dev:** 150-ft. adit. **Ref:** 46, pp. 220-221. 154, p. 92.

Campbell

(see Holden-Campbell under gold)

Caribou (83)

(see under gold)

Carr (4)

Loc: Secs. 14 and 15, (38-20E), adjacent to Billy Goat prospect. **Access:** Road up Eightmile Cr. **Prop:** 4 unpatented claims. **Owner:** Ralph Kennison, Winthrop, Wash. (1946). **Ore:** Copper, gold, silver, lead, zinc, molybdenum. **Ore min:** Pyrite, chalcopryrite, sphalerite, galena, molybdenite. **Deposit:** Fractured and silicified volcanic rock containing mineralized stringers. **Dev:** 2 adits 10 to 20 ft. long. **Assays:** Similar to those of the Billy Goat. **Ref:** 158.

Castle Creek (90)

(see under lead)

Catherine (14)

(see under silver)

Central (Trinidad) (154)

(see under silver)

Central (American Flag)

(see American Flag under gold)

Chicago (204)

(see under gold)

Chicago and New York

(see under gold)

Chickamun (195)

Loc: Sec. 4, (32-22E) and sec. 33, (33-22E), Twisp dist. **Owner:** Geo. Gibson, John Russell, and John Thomas, Twisp, Wash. (1951-1952). **Ore:** Copper, silver gold. **Ref:** 133, p. 31. 150, p. 29.

Chief Sunshine (168)

(see under silver)

Chloride

(see under silver)

Chopaka (63)

(see under silver)

Climax (129)

Loc: SW $\frac{1}{4}$ sec. 14, (36-19E). **Elev:** 2,400 ft. **Access:** About 1 mi. NW. of Mazama. **Prop:** 5 unpatented claims. **Owner:** Ed Kagel, Mazama, Wash. (1933). **Ore:** Copper, zinc. **Ore min:** Pyrite, chalcopryrite, sphalerite, secondary copper minerals. **Gangue:** Quartz, calcite. **Deposit:** Fracture in andesite filled with quartz and calcite and sparsely mineralized. **Dev:** 130-ft. drift and a shallow shaft. **Ref:** 158.

Continental

(see Mazama Queen under gold)

Controller (125)

Loc: Sec. 36, (31-31E). **Access:** 7 mi. SSW. of Nespelem. **Ore:** Copper, silver, zinc. **Ore min:** Magnetite, pyrite, chalcopryrite, sphalerite. **Gangue:** Vesuvianite, red and green garnet. **Deposit:** Limy argillite and impure limestone surrounded and metamorphosed by granite. **Dev:** Shaft. **Assays:** A fairly representative sample from one of the dumps assayed 1.2 oz. Ag, 1.9% Cu. **Ref:** 122, p. 81.

Copper Glance (8)

Loc: NE $\frac{1}{4}$ sec. 35, (38-20E), about 2 mi. SE. of the Billy Goat group, Eightmile Cr. area. **Elev:** 5,500 to 5,700 ft. **Access:** 1 $\frac{1}{2}$ mi. by trail from the end of Eightmile Cr. road. **Prop:** 12 unpatented claims and a millsite. **Owner:** Copper Glance Mining Co., Seattle, Wash. (1947-1952). **Ore:** Copper, gold, silver. **Ore min:** Pyrite, chalcopryrite, chalcocite, hematite. **Gangue:** Quartz, calcite, barite. **Deposit:** Fracture zone in andesite 80 to 100 ft. wide has been mineralized in places by copper and a little gold and silver. **Dev:** 200-ft. adit, 50-ft. adit, and several open cuts. **Improv:** Cabin (1948). **Assays:** Low values in copper, gold, and silver over minable widths. **Prod:** 2 tons of hand-sorted ore shipped in 1914. **Ref:** 97, 1915, p. 571. 133, p. 32. 158.

Copper King (23)

Loc: Sec. 17, (39-26E), Palmer Mtn. dist. **Owner:** Copper World Gold Mining & Smelting Co. (1915-1924). **Ore:** Copper, gold. **Ref:** 63, p. 103. 98, 1918-1925.

Copper King (157)

(see under lead)

Copper Queen (73)

Loc: NW $\frac{1}{4}$ sec. 24, (40-30E), Myers Cr. dist. **Prop:** 1 claim. **Ore:** Copper. **Ore min:** Magnetite, chalcopryrite, pyrrhotite, pyrite, scheelite. **Gangue:** Garnet, epidote, quartz. **Deposit:** A 2-ft.

shear zone in quartzite and garnet-epidote rock carries disseminated ore minerals. **Dev:** 100-ft. adit, 30-ft. adit, deep shaft, 8 or more open cuts. **Assays:** Scheelite constitutes only a fraction of 1% of the zone. **Ref:** 158.

Copper Queen

Loc: On Kruger Mtn., Oroville dist. **Ore:** Copper. **Ore min:** Copper sulfides. **Gangue:** Quartz. **Ref:** 63, p. 103.

Copper World (24)

Loc: S½SW¼ sec. 20, (39-26E). Joins Copper World Extension on the W., on Palmer Mtn. **Elev:** 2,000 to 2,500 ft. above the valley floor. **Prop:** 1 patented claim: Copper World. **Owner:** Jerome J. Drumbheller, Spokane, Wash. (1942). Copper World Gold Mining & Smelting Co. (1915-1924). **Ore:** Copper, gold, silver. **Ore min:** Pyrite, chalcopyrite, arsenopyrite, pyrrhotite. **Deposit:** Vein enclosed in schist and slate contains intermixed fragments of these rocks. The vein is traceable on the surface for some distance. **Dev:** 135-ft. inclined shaft which ran out of ore at a depth of 35 ft., and 2 shallow shafts. **Assays:** Surface ore said to assay 35% Cu, \$5 Au, \$2.50 Ag. **Ref:** 63, p. 101. 98, 1922, p. 1641; 1925, p. 1812. 105, 1906, p. 427. 112, p. 175. 154, p. 104. 158.

Copper World Extension (Iron Mask) (25)

Loc: S½ sec. 20 and N½ sec. 29, (39-26E), just W. of the summit of central part of Palmer Mtn. **Elev:** 4,100 ft., 2,000 to 2,500 ft. above valley floor. **Access:** 3 mi. SE. of Palmer Lk. by road. **Prop:** 11 patented claims: Homestake, Caylor, Iron Mask, Three Links, Rainy Day, 20th Century, Columbus, Anaconda, Lottie. **Owner:** Copper World Extension Mining & Smelting Co., Columbus, Ohio (1907-1942). Leased to John H. Snyder, Columbus, Ohio (1942). Leased to Dempster Bros. (World War I). **Ore:** Copper, gold, silver, tungsten. **Ore min:** Pyrite, chalcopyrite, azurite, malachite, pyrrhotite, arsenopyrite, magnetite, sphalerite. **Gangue:** Quartz. **Deposit:** Series of overlapping tabular lenses in shear zones, the principal one being about 100 ft. wide, along the contact between siliceous limestone and greenstone. The lenses consist of solid pyrite and chalcopyrite. Lenses seldom more than a few hundred tons. **Dev:** 300-ft. vertical shaft with drifting on 100-ft. intervals. Most work on 100-ft. and 200-ft. levels. About 1,900 ft. total. **Assays:** Mining ore—2½% to 4% Cu, 1 oz. Ag, \$0.50 to \$1.00 Au. 3,486 tons produced 1918-1919 av. 3.147% Cu, 0.42 oz. Ag, 0.03 oz. Au. **Prod:** Prior to 1911. Also 1918, 1919 (3,486 tons). **Ref:** 33, 1907, p. 538; 1908, p. 598. 91, pp. 249-250. 97, 1918, p. 507; 1919, p. 503; 1920, p. 268. 98, 1918-1926. 105, 1905, p. 300. 112, p. 174. 129, pp. 240-243. 130, p. 63. 154, pp. 102-103. 158.

Copper Zone

Loc: Conconully dist. **Owner:** Wm. Hargrove and Henry Baker, Conconully, Wash. (1941). **Ore:** Copper, silver, lead. **Prod:** 1937. **Ref:** 58, p. 16. 97, 1938, p. 459.

Crescent (147)

Loc: N. center sec. 15, (34-18E), on Crescent Mtn. **Elev:** 4,500 ft. **Access:** About 1½ mi. by trail SW. of Gilbert, terminus of the Twisp R. road. **Prop:** 2 unpatented claims. **Owner:** L. L. LaMotte and F. C. Blocksom, Twisp, Wash. (1946). **Ore:** Copper. **Ore min:** Pyrite, chalcopyrite. **Deposit:** Highly fractured schist, quartzite, and siliceous limestone are slightly mineralized in places. **Dev:** 1,000-ft. adit. **Ref:** 158.

Crescent

(see Triune under gold)

Crown Point

(see Imperial under gold)

Crystal Butte (Mother Lode) (70)

(see under gold)

Crystal Butte (71)

(see under iron)

Crystalite

(see under gold)

Cumberland

Loc: On Bear Cr. at foot of Gilbert Mtn., Twisp dist. **Ore:** Copper. **Ore min:** Copper sulfide. **Ref:** 63, p. 91.

Daisy (130)

(see under gold)

Damfino (203)

(see under gold)

Delate (64)

Loc: SE¼ sec. 8, (40-30E). **Prop:** 1 claim. **Ore:** Copper, lead. **Ore min:** Pyrite, galena, bornite. **Gangue:** Quartz, calcite. **Deposit:** Ore occurs as limited fillings along joints and fractures in quartzite. **Dev:** Short adit with drifts to E. and W. total about 300 ft. **Ref:** 105, 1903, p. 295. 154, p. 52.

Denver City

(see Leadville under gold)

Detroit-Windsor (36)

(see under gold)

Dividend

Loc: W. of Osoyos Lk., approx. sec. 7, (40-27E). **Ore:** Copper, gold, silver. **Deposit:** Large low-grade disseminated deposit in diorite and lime silicate rocks. **Dev:** Adit. **Assays:** Said to av. 1.25% Cu, \$0.75 to \$1.00 Au and Ag. **Ref:** 54, pp. 7, 8-9.

Dixie Queen

(see Antimony Queen under antimony)

Doris Barbara (205)

(see under tungsten)

Double Header

(see Little Chief under silver)

Double Standard (32)

Loc: Near W. ¼ cor. sec. 28, (39-25E), Palmer Mtn. dist. **Ore:** Copper. **Ref:** 63, p. 104.

Dutch John (197)

(see under tungsten)

Eloise (15)

(see under silver)

Emerald (214)

(see under gold)

Empire (22)

(see under gold)

Esther (158)

(see under lead)

Eureka (91)

(see under lead)

Eureka

(see under lead)

Eureka

(see under silver)

Evening (114)

(see under silver)

Evening Star (159)

(see under silver)

Favorite (62)

(see under lead)

First Thought (179)

(see under silver)

Floyd (Schoenfeld) (191)

Loc: SW¼ sec. 18, (33-22E), Twisp dist. **Access:** Road. **Owner:** Fred Floyd, Twisp, Wash. (1951). **Ore:** Copper, gold. **Ore min:** Chalcopyrite, pyrite. **Deposit:** Pyritized greenstone with local concentrations of chalcopyrite up to 80 ft. wide. **Ref:** 158.

Fluorspar

(see Tonasket)

49th Parallel (52)

Loc: NE¼NE¼ sec. 6, (40-27E), 1,500 ft. NW. of O.K. copper mine. **Elev:** 1,200 ft. **Access:** 1 mi. of truck road westward from ½ mi. S. of U. S. Customs depot. **Prop:** 5 claims. **Owner:** Kent Hagelberge, Oroville, Wash. (1943). **Ore:** Copper, gold, tungsten. **Ore min:** Chalcopyrite, bornite, pyrite, scheelite. **Deposit:** Fracture zone in greenstone 5 ft. wide contains mineralized quartz veinlets up to 12 in. wide. **Dev:** 145-ft. adit, 100-ft. adit, and two 20-ft. adits, also an incline and four shafts. **Assays:** \$14 to \$58 Cu and Au. **Prod:** Gold-copper ore in 1914. **Ref:** 37, p. 33. 64, p. 85. 97, 1915, p. 572. 129, p. 246. 154, p. 89. 158.

Four Aces (219)

(see under gold)

Four Metals (16)

(see under lead)

Fourth of July (183)

(see under silver)

Frankie Boy (171)

(see under silver)

Friday (222)

(see under gold)

Frosty

(see under gold)

Fuller (223)

(see under iron)

Gearhart (26)

Loc: SW¼ sec. 19, (39-26E), Palmer Mtn. dist. **Ore:** Copper. **Ref:** 114, no. 5, 1909, p. 80.

Gloucester

Loc: Myers Cr. dist. **Owner:** British Columbia Copper Co., Ltd. (1908-1916). **Ore:** Copper. **Ref:** 33, 1908, p. 413.

Goat Creek

Loc: On Goat Cr., Mazama area. **Prop:** 9 claims. **Owner:** Goat Creek Mining Co. (1902-1907). **Ore:** Copper, gold, silver. **Deposit:** 5-ft. vein. **Dev:** 127-ft. shaft, 25-ft. shaft, 350-ft. crosscut with 50-ft. drift. **Assays:** Av. 16% Cu, \$2 Au, 14 oz. Ag (1902). **Ref:** 33, 1907, p. 628. 88, pp. 35-36.

Gold Axe

(see under gold)

Gold Crown (12)

(see under gold)

Gold Crown

(see Spokane under gold)

Gold Dust (53)

Loc: Adjoins the Dividend property on the S. Approx. sec. 7, (40-27E). **Prop:** 1 claim. **Ore:** Copper, gold, silver. **Deposit:** Reportedly 3 mineralized belts in diorite and lime silicate rocks.

Assays: Wide disseminated zone said to assay 1.25% Cu, \$0.75 to \$1.00 Au and Ag. **Ref:** 54, p. 9.

Gold Hill (33)

(see under gold)

Gold Key (138)

(see under gold)

Golden Chariot (54)

Loc: SE¼ sec. 6 and NE¼ sec. 7, (40-27E), Oroville dist. **Elev:** 1,500 ft. **Access:** 1 mi. of truck road connects with county road to the E. **Prop:** 4 patented claims: Waverly, Golden Chariot, Gold Boy, New Year. **Owner:** Stock company under management of W. H. Thomas, Oroville, Wash. (1943). **Golden Chariot Mining & Smelting Co.** (1907-1912). **Ore:** Copper, silver, gold, molybdenum, tungsten. **Ore min:** Chalcopyrite, pyrite, scheelite, molybdenite. **Deposit:** Ore zone 5 ft. wide consists of a series of S-shaped mineralized quartz lenses filling fractures in argillite. **Dev:** 350-ft. inclined shaft with considerable drifts and stopes. Also several open cuts. **Assays:** \$2 to \$9 Ag. As much as 0.8% scheelite. **Prod:** \$4,000 prior to 1911. 9 cars hand-sorted ore shipped sometime later. **Ref:** 37, pp. 32-33. 64, p. 85. 97, 1912, p. 921; 1916, p. 613. 112, p. 180. 116, no. 7, 1907, p. 8; no. 8, 1907, p. 14. 129, p. 246. 154, pp. 87-88. 157. 158.

Golden Zone (9)

(see under gold)

Goodenuff (102)

(see under silver)

Grand Coulee

(see Little Chief under silver)

Grand Summit

(see Palmer Summit under gold)

Grandview (Leadville)

(see Leadville under gold)

Grandview

(see under gold)

Grant

(see Roosevelt under iron)

Gray Eagle (220)

(see under gold)

Great Divide (111)

(see under silver)

Great Metals

(see Anchor under silver)

Grover Cleveland

(see under lead)

Grubscher

(see Gubser under lead)

Gubser (160)

(see under lead)

Hanks (7)

Loc: Near NW. cor. sec. 23, (38-20E), adjacent to Billy Goat prospect. **Elev:** 4,600 to 4,700 ft. **Access:** Road up Eightmile Cr. **Prop:** 3 unpatented claims. **Owner:** Clint Hanks, Winthrop, Wash. (1946). **Ore:** Copper, gold, silver, lead, zinc. **Ore min:** Pyrite, chalcopyrite, sphalerite, galena, molybdenite. **Deposit:** Similar to that of Billy Goat prospect. Small mineralized quartz veinlets in a wide area of altered volcanic rock. **Dev:** 2 adits 20 to 30 ft. long and several open cuts. **Improv:** Cabin (1946). **Ref:** 158.

Hargrove

(see Silver King under lead)

Hart Stone

(see Kelsey)

Henrietta (208)

(see under gold)

Hercules (97)

(see under lead)

Hercules (34)

(see under gold)

Hiawatha (46)

(see under gold)

Hidden Treasure (100)

Loc: Sec. 33, (32-30E). **Access:** 5 mi. NW. of Nespelem and about 1 mi. N. of the Nespelem-Omak road. **Ore:** Copper, silver, gold. **Ore min:** Chalcopryite, pyrite, magnetite, specularite. **Gangue:** Vesuvianite, hornblende. **Deposit:** Small body of argillite and schist surrounded and metamorphosed by granite. **Dev:** Several shafts to depths of at least 40 ft. **Assays:** Sample selected from one of the dumps assayed 2.16 oz. Ag, tr. Au, 5.15% Cu. **Ref:** 122, p. 82.

Hidden Treasure (Highland) (209)

(see under gold)

Highland (210)

(see under gold)

Highland Light

(see Highland under gold)

Hilo

(see St. Paul under silver)

Holden-Campbell (206)

(see under gold)

Home Run (103)

(see under silver)

Horn Silver (61)

(see under silver)

Hotchkiss

(see Mazama Pride under gold)

Hudnut (Hudnutt) (109)

(see under zinc)

Hunter (211)

(see under gold)

I Just Live Here (207)

Loc: NE¼NE¼ sec. 10, (30-22E), on ridge top ½ mi. NE. of Doris Barbara prospect. **Prop:** Part of Holden-Campbell group. **Ore:** Copper. **Ore min:** Copper stains. **Deposit:** A 4- to 5-ft. quartz vein. **Dev:** Several small open cuts. **Ref:** 158.

Imperial (134)

(see under gold)

Independence (202)

(see under gold)

Index

Loc: Twisp dist., near Gilbert. **Owner:** Twisp Gold Copper Mining Co. (1907-1918). **Ore:** Copper. **Ref:** 33, 1908, p. 1346. 98, 1918, p. 141. 116, no. 7, 1907, p. 33; no. 9, 1907, p. 17.

International

Loc: On Kruger Mtn., Oroville dist. **Ore:** Copper, gold. **Dev:** 25-ft. shaft. **Ref:** 63, p. 103.

Iron Cap and Snow Cap (145)

(see under gold)

Iron Dike (94)

(see under zinc)

Iron Mask

(see Copper World Extension)

Ironsides and Anna B. (75)

Loc: Sec. 24, (40-30E), ½ mi. S. of the Western Star property. **Ore:** Copper, gold. **Deposit:** Reportedly a continuation of the Western Star deposit. **Assays:** Said to be good copper-gold values. **Ref:** 54.

Jackpot (76)

(see under gold)

Japan

Loc: Mazama dist. **Owner:** Hillcrest Copper Co. (1918). **Ore:** Copper, gold, silver. **Ref:** 112, p. 182.

John Judge

(see Leadville under gold)

Jones (143)

Loc: N. center sec. 24, (35-21E). **Access:** 3 mi. NE. of Winthrop. **Prop:** Deeded land. **Owner:** Jack Jones, Winthrop, Wash. (1946). **Ore:** Copper, silver, gold, mercury. **Ore min:** Malachite, chrysocolla, cinnabar. **Gangue:** Quartz, calcite. **Deposit:** Altered and fractured volcanic rock contains siliceous zones and very small quartz-calcite veinlets. Disseminated copper minerals occur in parts of the zones, and one zone contains a little cinnabar. **Dev:** 1 open cut. **Assays:** 1 selected specimen assayed 0.56% Cu, 0.16 oz. Ag, tr. Au. Select specimens of cinnabar-bearing material said to assay 0.2% Hg. **Ref:** 158.

Josie

(see Hiawatha under gold)

Jumbo (99)

(see under chromium)

Jupiter

(see Tip Top)

Kaaba (17)

(see under lead)

Kaaba-Texas

(see Kaaba under lead)

Kalamazoo (41)

Loc: NW¼ sec. 33, (39-26E), Palmer Mtn. dist. **Ore:** Copper. **Ref:** 63, p. 101.

Kankakee (115)

Loc: Near NW. cor. sec. 22, (31-30E), Nespelem dist. **Owner:** William Bernard and E. Christianson (1939). Kankakee Mining Co. (1918-1926). **Ore:** Copper, lead, silver. **Ore min:** Chalcopryite, pyrite, argentite (?). **Gangue:** Fluorite, quartz. **Deposit:** Weak mineralization along fractures in granite and quartzite. One 2-in. quartz vein. **Dev:** 2 levels connected by raise. **Prod:** Small test shipment of oxidized lead ore. **Ref:** 97, 1925, p. 559. 98, 1920-1926. 112, p. 186. 158.

Kansas (173)

Loc: Sec. 30, (35-25E), Conconully dist. **Ore:** Copper, lead, silver. **Ref:** 58, p. 36.

Kelsey (Hart Stone, Stone) (55)

Loc: At common corner of secs. 5, 6, 7, and 8, (40-27E), W. of Osoyoos Lk. **Elev:** 1,100 to 1,600 ft. **Access:** 4 mi. N. of Oroville. **Prop:** 9 patented claims. Tunnel Site, Ivanhoe No. 2, Osoyoos Lode, Washington, Alhambra, Big Iron Nos. 1 and 2, Little Lake, Denver. **Owner:** Joe Stone, Chewelah, Wash.

(1943). Detroit-Oroville Exploration Co. (1911). **Ore:** Copper, silver, gold. **Ore min:** Chalcopyrite, pyrite, magnetite, pyrrhotite. **Gangue:** Quartz, garnet, epidote. **Deposit:** Greenstone, slate, and quartzite contain disseminated ore minerals and mineralized quartz stringers along joints and fractures. Apparently a large low-grade deposit. Also some tactite which carries magnetite, chalcopyrite, and pyrrhotite. **Dev:** Several small open cuts and shafts in addition to 6 diamond drill holes each about 100 ft. deep. **Assays:** Av. of 18 assays gave 2.62% Cu, 0.6 oz. Ag, 0.04 oz. Au. **Ref:** 33, 1908, p. 628. 154, pp. 85-87.

Key (161)

(see under silver)

Kimberly (45)

(see under lead)

King Solomon

(see under gold)

Lady of the Lake (167)

(see under silver)

Laeuna

(see Leuena under silver)

Lakeview

(see Prize under lead)

Last Chance (180)

(see under silver)

Launa

(see Leuena under silver)

Lead Horse (2)

(see under lead)

Leadville (27)

(see under gold)

Leuena (169)

(see under silver)

Lilman (119)

(see under silver)

Little Chief (120)

(see under silver)

Little Chopaka (18)

(see under lead)

Lodge

(see Dutch John under tungsten)

London

(see Methow under gold)

Lone Pine (Fuller, Pateros)

(see Fuller under iron)

Lone Pine (60)

(see under silver)

Lone Star (170)

(see under lead)

Louisa

(see Standard and Louisa under gold)

Lucky Jim (142)

Loc: Near SE. cor. sec. 7, (35-20E), Winthrop area. **Owner:** Methow Gold & Copper Mining Co. (1917). **Ore:** Copper, silver, gold. **Ore min:** Chalcopyrite, pyrrhotite. **Deposit:** Irregular quartz-calcite vein in agglomerate or graywacke. 10 tons of ore on dump consists of irregular bunches of ore minerals in the gangue. **Dev:** 400-ft. adit now caved and 2 other caved adits. **Assays:** Ore on dump est. to carry 6% Cu. **Ref:** 158.

Luke

(see Molly)

Lulu

(see under silver)

MacLean

(see Roosevelt under iron)

Magnetic (77)

(see under iron)

Maid of Erin (89)

Loc: Sec. 1, (34-31E), Park City dist. **Ore:** Copper. **Ore min:** Pyrite, chalcopyrite. **Deposit:** 2 parallel lenticular veins of white quartz 3 ft. in max. width in mica schist. Here and there in the quartz are small lenslike bunches of pyrite and chalcopyrite. **Dev:** Open cut. **Ref:** 122, p. 102.

Malott (187)

Loc: SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 22, (32-25E), NE. of Malott. **Access:** 10 mi. by road from railroad at Monse. **Owner:** Phillip Bedard and John Burns, Okanogan, Wash. (1942). **Ore:** Copper, zinc, molybdenum, nickel. **Ore min:** Pyrite, pyrrhotite, chalcopyrite, sphalerite, molybdenite. **Gangue:** Quartz, feldspar. **Deposit:** Knolls of quartz and pegmatite surrounded by granite. One zone in the pegmatite is mineralized for at least 12 ft. in length. **Dev:** 4 adits and open cuts. **Assays:** 2 channel samples, each 4 ft. long, showed 0.14% and 0.15% Mo. **Prod:** 200 to 300 lb. of sulfide ore on the dump. **Ref:** 157. 158.

Mammoth (156)

(see under silver)

Manuel

Loc: On Aeneas Mtn. **Ore:** Copper, gold. **Ref:** 63, p. 105.

Maquae

(see under gold)

Marguerite (174)

Loc: Sec. 30, (35-25E), Conconully dist. **Ore:** Copper, lead, silver. **Ref:** 58, p. 42.

Marshal Ney

(see under gold)

Mazama Pride (139)

(see under gold)

Mazama Queen (131)

(see under gold)

Methow (215)

(see under gold)

Mid Range (146)

(see under gold)

Midas No. 1 (28)

Loc: Sec. 24, (39-25E), Palmer Mtn. dist. **Owner:** Messrs. Nall and Retzer (1929). **Ore:** Copper. **Ore min:** Chalcopyrite, pyrite, malachite. **Deposit:** Shear zone in gabbro contains chalcopyrite and pyrite. Numerous quartz veins are apparently barren. **Dev:** 30-ft. drift. **Ref:** 158.

Mikelson (56)

Loc: SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 6, (40-27E), Oroville dist. **Prop:** 1 claim. **Owner:** O. Mikelson, Oroville, Wash. (1943). **Ore:** Copper. **Ore min:** Chalcopyrite, malachite. **Deposit:** Sparsely mineralized quartz stringers in a sheared and crushed greenstone. **Dev:** 280-ft. adit, inclined shaft, open cuts. **Improv:** Cabin (1943). **Ref:** 158.

Milwaukee (216)

(see under tungsten)

Mineral Hill (112)

Loc: SW. part sec. 10 and near W. line sec. 15, (31-30E). **Access:** 4 mi. W. of Nespelem by road. **Owner:** Multnomah Mining Co. (1907-1922). **Ore:** Copper. **Ore min:** Chalcopyrite, pyrite. **Gangue:** Lime silicate. **Deposit:** Small sedimentary xenoliths in granite. Contact metamorphosed similarly to those of Modoc. In addition, granite contains disseminated chalcopyrite and pyrite. **Dev:** Pits. **Ref:** 122, p. 83.

Mineral Hill (Washington Consolidated, Seven Devils) (162)

(see under silver)

Mineralite (213)

(see under tungsten)

Minnie (196)

(see under gold)

Modoc (104)

Loc: Sec. 9, (31-30E), Nespelem dist. **Owner:** A. H. Bonner and associates, Nespelem, Wash. (1949). **Ore:** Copper, gold, silver, zinc. **Gangue:** Lime silicate minerals. **Deposit:** Metasediments in contact with granite. **Dev:** 40-ft. shaft (1913). **Ref:** 68, p. 14. 122, pp. 82-83.

Mohawk

(see under lead)

Molly (Luke) (136)

Loc: NW¼ sec 20, (36-20E), near Goat Cr. road. **Elev:** 3,000 to 3,500 ft. **Access:** 3½ mi. from Mazama on Goat Cr. road. **Prop:** 5 unpatented claims. **Owner:** S. W. Shafer, Winthrop, Wash., leasing to Leybold & Scales, Inc., Tacoma, Wash. (1949). **Ore:** Copper, gold, silver. **Ore min:** Pyrite, molybdenite, specularite, chalcopyrite, malachite, azurite, bornite. **Gangue:** Quartz. **Deposit:** Sulfides occur along fractures in an altered and fractured volcanic rock. Ore tenor is low. **Dev:** 70-ft. adit, 65-ft. adit, 45-ft. adit, and about 20 open cuts and bulldozed trenches. **Improv:** Cabin, tool shed (1949). **Ref:** 68, p. 12. 158.

Moncosilgo (Adams) (51)

Loc: NE¼SE¼ sec. 20, NW¼SW¼ sec. 21, (40-27E), about 1 mi. NW. of Oroville. **Elev:** 1,650 ft. **Access:** 2 mi. by road from railroad at Oroville. **Prop:** 120 acres deeded land. **Owner:** C. S. Adams, W. J. Ripley, J. E. Stuibler, Oroville, Wash. (1943). **Ore:** Copper, gold, silver. **Ore min:** Chalcopyrite, bornite, cuprite, pyrite, pyrrhotite, native copper, molybdenite, scheelite. **Gangue:** Quartz, calcite. **Deposit:** Disseminations and small veinlets in silicified bands in diorite. Mineralized zone exposed for 200 ft. along strike. **Dev:** 56-ft. adit, 10-ft. drift, open cuts. **Assays:** Tr. to 0.05 oz. Au, 0.10 to 2.32 oz. Ag, 0.51% to 10.6% Cu. No commercial W. **Ref:** 37, p. 31. 157.

Monitor (163)

(see under lead)

Montana (135)

Loc: Near center sec. 16, (36-20E), Mazama dist. **Elev:** 5,000 to 5,500 ft. **Access:** About 2 mi. by trail up Montana Cr. from Goat Cr. road. **Prop:** 1 claim: Montana. **Owner:** Henry and Homer Peters, Winthrop, Wash. (1944). Probably abandoned (1946). **Ore:** Copper, gold. **Ore min:** Chalcopyrite, pyrite, arsenopyrite, pyrrhotite. **Deposit:** Mineralized quartz vein in siliceous diorite country rock. **Dev:** 85-ft. adit and 2 caved adits, one of which may be 400 to 500 ft. long. **Improv:** Several old buildings, mill building, 4 stamps, crusher, and rolls (1946). **Prod:** 1915. **Ref:** 97, 1915, p. 571. 158.

Monterey (78)

Loc: NW¼ sec. 24, (40-30E), Myers Cr. dist. **Prop:** 6 patented claims. **Owner:** Monterey Gold Mining Co. (1902-1907).

Ore: Copper, iron, gold, silver, lead. **Ore min:** Chalcopyrite, pyrite, magnetite, galena. **Gangue:** Garnet, epidote, sericite, chlorite. **Deposit:** Irregular contact metamorphic ore bodies in metasedimentary rocks, near their contact with syenite. **Dev:** 800-ft. adit, 65-ft. shaft. **Assays:** Best ore yielded \$50 to \$80 per ton. **Ref:** 88, p. 27. 133, 1907, p. 821. 154, pp. 46-47.

Montgomery

(see Tonasket)

Mother Lode

(see Crystal Butte under gold)

Mountain Beaver (5)

(see under gold)

Mountain Boy (92)

(see under lead)

Multnomah (105)

Loc: SE¼SW¼ sec. 9, (31-30E). **Elev:** 3,000 ft. **Access:** 5 mi. by road NW. of Nespelem. **Prop:** 10 claims. **Owner:** Columbia Consolidated Mines Co. (1924-1926). Multnomah Mining Co. (1907-1922). **Ore:** Copper, gold, silver, lead. **Ore min:** Chalcopyrite, pyrite, unidentified black sulfide. **Gangue:** Quartz, fluorite. **Deposit:** Mineralized xenoliths of sedimentary rock and a 1- to 12-in. quartz vein in granite. **Dev:** 1,220-ft. adit. **Assays:** \$5 to \$50 in Au, Ag, Cu, Pb. **Ref:** 33, 1907, p. 838. 88, p. 34. 98, 1918-1926. 105, 1908, p. 761. 112, p. 193. 122, pp. 78-79.

Myers Creek (79)

(see under iron)

Myrtle

(see St. Paul under silver)

Neutral

(see Magnetic under iron)

Nevada (175)

(see under silver)

New Deal

(see Antimony Queen under antimony)

New Hope (1)

Loc: W½ sec. 19, (38-18E), on E. side of Buckskin Ridge, in Pasayten R. drainage, near Harts Pass. **Access:** 7 mi. by trail from road at Harts Pass. **Prop:** 7 claims. **Owner:** R. C. Matney, Prosser, Wash., and R. A. Morgan, Portland, Ore. (1951). **Ore:** Copper, gold, silver. **Ore min:** Chalcopyrite, pyrrhotite. **Deposit:** 2 lenticular quartz veins in metamorphic rocks near granite. **Dev:** 3 open cuts. **Assays:** Less than 1% Cu, low values in Au, Ag. **Ref:** 157. 158.

New London

(see Methow under gold)

New York

(see under gold)

New York

(see Chicago and New York under gold)

Nina Lu (121)

(see under silver)

Nip and Tuck (80)

Loc: NE¼ sec. 23, (40-30E), Myers Cr. dist. **Owner:** John N. Evans, Bolster, Wash. (1911). **Ore:** Copper, gold, silver. **Ore min:** Chalcopyrite, pyrite. **Deposit:** Body of ore more than 10 ft. wide with neither wall exposed consists almost entirely of pyrite and chalcopyrite. **Dev:** Prospect pit. **Assays:** Said to assay \$32 Cu, Au, Ag. **Ref:** 154, p. 47.

Number Nine (81)

(see also Magnetic under iron)

Loc: NW¼ sec. 24, (40-30E), Myers Cr. dist. **Prop:** 1 claim of Magnetic property. **Owner:** Magnetic Mining Co., Colville, Wash. (1949). **Ore:** Copper, iron. **Ore min:** Pyrite, chalcopyrite, magnetite. **Gangue:** Garnet, epidote, calcite, quartz, actinolite, tremolite, diopside. **Deposit:** Small quantities of ore minerals in a contact metamorphic zone near intrusive syenite. **Ref:** 68, p. 12. 154, pp. 47-48.

Number One (19)

(see under lead)

O. K. (57)

Loc: Near center sec. 6, (40-27E), 4 mi. N. of Oroville. **Elev:** 1,500 ft. **Access:** 1 mi. SW. of U. S. Customs depot by road. 4 mi. from railroad. **Prop:** 3 claims and 2 fractions. **Owner:** Al Hagelberge, Oroville, Wash. (1943). Oroville Copper Co. (1921-1924). **Ore:** Copper, silver, gold. **Ore min:** Chalcopyrite, bornite, tetrahedrite, pyrite, molybdenite, scheelite. **Deposit:** Fracture zone more than 5 ft. wide in which are mineralized quartz stringers and lenses up to 4 ft. wide. **Dev:** 2 adits, one 520 ft. long with 120 ft. of drifts, a 60-ft. and a 20-ft. inclined shaft, and numerous open cuts. **Assays:** 7% Cu, 6 oz. Ag, \$2.00 Au from shipments. No commercial W. **Prod:** 3 cars of ore prior to 1911. 19 cars of ore shipped between 1917 and 1921. **Ref:** 37, pp. 31-32. 64, p. 85. 97, 1915, 1916, 1918. 98, 1922, p. 1660; 1925, p. 1827. 129, pp. 244-245. 157. 158.

Ohio (58)

Loc: Sec. 5, (40-27E), just S. of the international boundary, Oroville dist. **Ore:** Copper. **Ore min:** Chalcopyrite, pyrite, malachite, azurite, chrysocolla. **Deposit:** Copper minerals sparsely disseminated in greenstone. **Ref:** 154, pp. 88-89.

Okanogan Copper (150)

(see under gold)

Old Glory (96)

Loc: SW¼NE¼ sec. 15, (33-31E), Park City dist. **Ore:** Copper, gold. **Ore min:** Pyrite, chalcopyrite. **Deposit:** Schist and argillite cut by small quartz veinlets which are sparsely mineralized. In places lenses of massive granular pyrite 1 ft. or less in thickness occur. **Dev:** 140-ft. adit. **Ref:** 58, p. 50. 122, p. 101.

Olentangy (68)

(see under gold)

Opal

(see under lead)

Orient

(see under gold)

Oriental and Central

(see American Flag under gold)

Osiola

Loc: Squaw Cr. dist. **Ore:** Copper, gold. **Ref:** 63, p. 89.

Palmer (186)

Loc: Sec. 20, (34-26E). **Access:** 5 mi. from railroad at Omak. **Ore:** Copper. **Ore min:** Tetrahedrite, pyrite. **Deposit:** Mineralized breccia zone in granite. **Ref:** 111, p. 5.

Palmer Lake (50)

Loc: SE¼ sec. 36, (40-26E), well up on the valley side NE. of Palmer Lk. **Prop:** 5 claims. **Ore:** Copper, gold. **Ore min:** Pyrite, chalcopyrite, bornite. **Deposit:** 2- to 3½-ft. vein of massive quartz carrying small amounts of ore minerals. **Ref:** 154, p. 101.

Palmer Mountain Tunnel (37)

(see under gold)

Palmer Summit (29)

(see under gold)

Panama (124)

(see under silver)

Parallel

(see under gold)

Pateros (Fuller, Lone Pine)

(see Fuller under iron)

Pateros

(see Sullivan under gold)

Pay Day (148)

(see under gold)

Peacock (Bornite) (6)

Loc: NW¼ sec. 10, (38-20E), on SW. slope of Billy Goat Mtn. **Elev:** 6,500 to 6,800 ft. **Access:** About 3 mi. by trail from end of the Eightmile Cr. road. **Prop:** 1 unpatented claim. **Owner:** Charles Kenney, Winthrop, Wash. (1946). **Ore:** Copper, gold, silver. **Ore min:** Pyrite, chalcopyrite, secondary copper minerals. **Gangue:** Quartz, calcite, barite. **Deposit:** A fairly well mineralized fracture zone 2 to 5 ft. wide in volcanic rock. **Dev:** 60-ft. drift. **Assays:** Specimen of vein material assayed 0.025 oz. Au, 4.65 oz. Ag, 3.14% Cu. **Ref:** 158.

Peacock (176)

(see under silver)

Peerless (10)

(see also Little Chopaka, Worthington under chromium)

Loc: SE¼ sec. 16 and W½ sec. 22, (40-25E), on S. face of Little Chopaka Mtn., Nighthawk dist. **Prop:** 20 claims, which probably include the Little Chopaka (Defense) and Worthington properties. **Owner:** Peerless Mining, Milling & Smelting Co. (1935). **Ore:** Copper, chromium. **Ore min:** Magnetite, pyrite, chalcopyrite, chromite, pyrrhotite. **Gangue:** Garnet, epidote. **Deposit:** Quartzite, argillite, and greenstone mineralized in places. No well-defined vein. Serpentinized peridotite cutting these rocks carries a little chromite. **Dev:** Several adits and shafts, one adit 400 ft. long. **Ref:** 40, p. 6. 105, no. 16, 1909, p. 541. 154, p. 93. 158.

Peoria (193)

(see under gold)

Phil Sheridan

(see Sheridan under copper)

Pinnacle (30)

(see under gold)

Pittsburg (116)

(see under silver)

Plant-Callahan (181)

(see under silver)

Prize (21)

(see under lead)

Pthomigan

(see under cobalt)

Pyrargyrite

(see Ruby under silver)

Q. S. (152)

Loc: N½ sec. 27, (37-25E), on steep mountain slope E. of Blue Lk. **Elev:** 2,000 to 3,500 ft. **Access:** 12 mi. by road N. of Conconully. **Prop:** 24 claims. **Owner:** Q. S. Copper Co. (1915-

1926). **Q. S. Gold Mining & Smelting Co.** (1902-1918). **Q. S. Mining Co.** (1920). **Ore:** Copper, gold, silver. **Ore min:** Chalcopryite, pyrite. **Deposit:** Metamorphic rocks intruded by diorite dikes contain sparsely disseminated ore minerals. **Dev:** 1,060-ft. crosscut, 600-ft. crosscut. **Assays:** 40 ft. of one mineralized zone said to av. 2½% Cu, but deposit as a whole av. less than 1% Cu, and only tr. Au, Ag. Some surface ore ran \$37 Au. **Ref:** 33, 1907, p. 943; 1908, p. 1144. 75, pp. 34-35. 88, pp. 32-33. 91, p. 249. 97, 1907, p. 475. 98, 1918-1926. 114, no. 5, 1909, pp. 80-81.

Rainbow (31)
(see under gold)

Ramore (98)
(see under lead)

Ramsey (101)
Loc: Sec. 33, (32-30E). **Access:** 5 mi. NW. of Nespelem and about 1 mi. N. of the Nespelem-Omak road. **Owner:** Columbia Consolidated Mines Co. (1924). Multnomah Mining Co. (1907-1922). Multnomah Mining, Milling & Development Co. (1915). **Ore:** Copper, silver, gold. **Ore min:** Chalcopryite, magnetite, pyrite, specularite. **Gangue:** Vesuvianite, hornblende. **Deposit:** Argillite and schist surrounded and metamorphosed by granite. **Dev:** Several shafts to depths of at least 40 ft., and a 100-ft. adit. **Assays:** Sample selected from one of the dumps assayed 2.16 oz. Ag, tr. Au, 5.15% Cu. **Ref:** 122, p. 82. 158.

Rattlesnake (192)
(see under gold)

Rebecca (128)
Loc: Near SE. cor. sec. 32, (30-31E), Nespelem dist. **Access:** 3 mi. E. of Barry by road. **Owner:** Rebecca Mining Co. (1921-1926). **Ore:** Copper, silver, zinc. **Ore min:** Pyrrhotite, chalcopryite, sphalerite, magnetite. **Gangue:** Epidote, vesuvianite, other lime silicate minerals. **Deposit:** Contact-metamorphosed pendant of argillite and limestone ½ mi. long and 500 ft. wide in granite. **Dev:** Several hundred feet of workings in 3 shafts and 2 adits, also open cuts. **Assays:** Representative sample from one of richest-looking dumps assayed 2.68 oz. Ag, tr. Au, 5.15% Cu. No assay made for Zn, which is commonly present but less in amount than Cu. **Ref:** 46, pp. 192-193. 98, 1922-1926. 100, 1900, p. 81. 122, p. 80. 129, pp. 216-217.

Reco (66)
(see under gold)

Red Bird (126)
Loc: Sec. 36, (31-31E). **Access:** 7 mi. SW. of Nespelem. **Ore:** Copper, silver, zinc. **Ore min:** Magnetite, chalcopryite, pyrite, sphalerite. **Gangue:** Vesuvianite, red and green garnet. **Deposit:** Limy argillite and impure limestone surrounded and metamorphosed by granite. **Dev:** Shaft. **Assays:** A fairly representative sample from one of the dumps assayed 1.2 oz. Ag, 1.9% Cu. **Ref:** 122, p. 81.

Red Shirt (194)
(see under gold)

Reedy
(see Antimony Queen under antimony)

Republic (177)
(see under lead)

Review (67)
(see under gold)

Rich Bar (59)
Loc: Approx. in W½ sec. 11, (40-26E), on Similkameen R. about 5 mi. E. of Nighthawk. **Prop:** 7 patented claims (1955).

Owner: S. J. Lewen, Curtice, Ohio (1955—). Rich Bar Mining Co. (1911-1915). **Ore:** Copper, zinc, silver, lead. **Ore min:** Chalcopryite, sphalerite, pyrite, stephanite, galena, argentite in order of decreasing importance. **Gangue:** Quartz. **Deposit:** Lode varies from stringers to a 6-ft. vein of mineralized quartz enclosed in quartzitic slate. **Dev:** Two shafts, deeper one 150 ft. deep with drifts from the 50- and 150-ft. levels. **Assays:** From tr. to \$40 per ton. Richer ore seems to occur in center of the lode. **Ref:** 46, p. 223. 154, pp. 95-96.

Rock House
(see under gold)

Roosevelt (74)
(see under iron)

Roosevelt (217)
(see under gold)

Rosalind (132)
(see under gold)

Ruby
(see under silver)

Ruby (11)
(see under silver)

Russia
Loc: Okanogan County. **Owner:** Hillcrest Copper Co. (1918). **Ore:** Copper, gold, silver. **Ref:** 112, p. 182.

Safe Deposit
Loc: Twisp dist. **Ore:** Copper, gold, silver. **Ref:** 63, p. 86.

St. Anthony (201)
(see under gold)

St. Lawrence
(see under gold)

St. Paul (122)
(see under silver)

Salmon River (164)
(see under silver)

Schoenfeld
(see Floyd)

Schulz and Chesney (221)
(see under gold)

Sections 4 and 9 (106)
Loc: W. part sec. 9 and SW¼ sec. 4, (31-30E). **Access:** Nespelem-Omak highway passes within 1½ mi. of the occurrence. **Ore:** Copper (?) **Deposit:** Mineralization and alteration similar to that of Home Run and Modoc. **Dev:** Prospect pits. **Ref:** 122, p. 83.

Security (39)
Loc: SW¼ sec. 36, (39-25E), halfway between Loomis and the Pinnacle mine, Palmer Mtn. dist. **Ore:** Copper, lead, zinc, gold. **Ore min:** Pyrite, chalcopryite, galena, sphalerite, reportedly free gold. **Gangue:** Quartz. **Deposit:** Shear zone in argillite carries a vein 70 ft. long and 0 to 3 ft. wide. It is sparsely mineralized. A similar vein occurs in the upper adit. **Dev:** 620-ft. adit, 200-ft. adit. **Prod:** Has produced. **Ref:** 100, vol. 11, 1903, p. 56; vol. 12, 1903, p. 103. 158.

Seven Devils
(see Mineral Hill under silver)

Sharp
(see Silver King)

Shaw-Bergman (83A)

Loc: NW¼ sec. 8, (39-29E), on Shaw's farm. **Elev:** 4,300 ft. **Access:** Road. **Prop:** Deeded land. **Owner:** Greg Collins and Axel Bergman, Seattle, Wash. (1953—). **Ore:** Copper, gold, silver. **Ore min:** Chalcopyrite, pyrite. **Deposit:** Ore minerals sparsely disseminated in schist across width of 3 ft. **Dev:** Open cut. **Assays:** About \$25 Au, Ag. **Ref:** 158.

Sheridan (85)

(see under copper)

Sherwood

(see Dutch John under tungsten)

Sidewinder

(see under gold)

Silver Belle

(see under silver)

Silver Bluff

(see under silver)

Silver Cliff (127)

(see under silver)

Silver King (Bunker Hill) (165)

(see under lead)

Silver King (Sharp) (140)

Loc: NW¼ sec. 29, (36-20E). **Elev:** 2,700 to 3,000 ft. **Access:** About 3 mi. by the Goat Cr. road from Mazama. **Prop:** 7 unpatented claims. **Owner:** Alva Sharp, Mazama, Wash. (1949). **Ore:** Copper, gold, silver, lead. **Ore min:** Pyrite, chalcopyrite, galena. **Gangue:** Quartz, calcite. **Deposit:** Altered volcanic or granitic rock cut by at least 2 fracture zones in which are 2 mineralized quartz-calcite veins from 2 to 14 in. thick. **Dev:** 155-ft. adit, 55-ft. adit, and several open cuts. **Improv:** Cabin (1949). **Assays:** 12 in. of vein material reportedly assayed \$7.00 Au. **Ref:** 68, p. 15. 158.

Silver Point (110)

Loc: NE¼SW¼ sec. 17, (31-30E), Nespelem dist. **Owner:** Joe Ott, Nespelem, Wash. (1939). **Ore:** Copper, lead. **Ore min:** Chalcopyrite, galena, pyrite. **Deposit:** Mineralized quartz stringers in metamorphic rock near intrusive granite. **Dev:** 2 adits. **Ref:** 158.

Silver Seal

(see Antimony Queen under antimony)

Silver Tip

(see Starr under molybdenum)

Six Eagles

(see Little Chopaka under lead)

Snow Cap

(see Iron Cap and Snow Cap under gold)

Sonny Boy (184)

(see under silver)

Sooner (133)

Loc: Sec. 17, (36-20E). **Elev:** 3,500 ft. **Access:** About 4 mi. from Mazama by the Goat Cr. road. **Prop:** 2 unpatented claims. **Owner:** The late Tom C. Luke, Mazama, Wash. (1946). **Ore:** Copper. **Ore min:** Pyrite, chalcopyrite. **Gangue:** Quartz, calcite. **Deposit:** Several fracture zones in diorite containing stringers of mineralized quartz and calcite. **Dev:** Caved shaft, reportedly 100 ft. deep, adit caved at the portal, and 4 or 5 open cuts. **Ref:** 158.

Spokane (American Rand) (47)

(see under gold)

Spokane (Gold Crown) (188)

(see under gold)

Standard and Louisa (212)

(see under gold)

Star

(see Lone Star under lead)

Starr (153)

(see under molybdenum)

Stone

(see Kelsey)

Submarine

(see Lone Pine under silver)

Sullivan

(see under gold)

Summit (93)

(see under lead)

Summit (20)

(see under silver)

Sunrise

(see under silver)

Sunshine

(see Hidden Treasure under gold)

Sunshine Chief

(see Chief Sunshine under silver)

Swayne (141)

Loc: Sec. 13, (36-19E), secs. 19, 20, and 30, (36-20E), Mazama dist. **Owner:** Everett Swayne, Mazama, Wash. (1951). **Ore:** Copper, molybdenum, antimony. **Ref:** 150, p. 40.

Teddy Roosevelt

(see Roosevelt under iron)

Texas Creek

(see Dutch John under tungsten)

Three Links

(see under gold)

Tip Top (Jupiter) (123)

Loc: SW¼ sec. 22 and NW¼ sec. 27, (31-30E), near crest of SE. spur of Mineral Hill, Nespelem dist. **Access:** ¼ mi. NW. of Cabin workings. **Prop:** 1 claim. **Ore:** Copper, lead, zinc. **Ore min:** Chalcopyrite, pyrite, marcasite, galena, sphalerite. **Gangue:** Quartz, calcite. **Deposit:** Numerous small mineralized quartz stringers in a shear zone in granite. Some mineralization in nearby metamorphic rocks. **Dev:** 100-ft. shaft, 80-ft. incline. **Ref:** 129, pp. 215-216. 158.

Tom Hal

(see Friday under gold)

Tomlinson

Loc: On Methow R. in Methow dist. **Owner:** D. W. Tomlinson, Mansfield, Wash. (1941). **Ore:** Copper, lead, zinc. **Ref:** 46, p. 200.

Tonasket (Montgomery, Fluorspar) (155)

Loc: Near NE. cor. sec. 12, (36-26E), 6 mi. S. of Tonasket and 1 mi. W. of the Okanogan R. **Prop:** 6 claims. **Owner:** H. H. Montgomery (1939). **Ore:** Copper, tungsten, lead, silver. **Ore min:** Pyrite, chalcopyrite, molybdenite, huebnerite, tungstite, galena. **Gangue:** Quartz, fluorite. **Deposit:** Schistose calcareous argillite carrying disseminated pyrite. Also some quartz veins carrying pyrite, galena, and chalcopyrite. A limy band contains fluorite. **Dev:** 200-ft. adit, several open cuts. **Assays:** Huebnerite reported to constitute 5% of the vein filling at one

place. Ore shows \$1 to \$2 Au, Ag. **Ref:** 54, pp. 23-24. 130, p. 90. 158.

Tough Nut (166)
(see under silver)

Triangle
(see Hidden Treasure under gold)

Trinidad
(see Central under silver)

Triune (48)
(see under gold)

Twin Pine (107)
(see under zinc)

Twisp View (189)
(see under gold)

Utica (35)
(see under gold)

War Eagle (40)
(see under gold)

War Eagle
(see under silver)

Wasco (95)
(see under silver)

Washington (218)
(see under gold)

Washington Consolidated
(see Mineral Hill under silver)

Western Star (82)
Loc: NW¼ sec. 24, (40-30E), Myers Cr. dist. **Ore:** Copper, gold, silver. **Deposit:** Mineralized shear zone in metamorphic rocks near intrusive granite. Reportedly 10 to 15 ft. of ore exposed. **Dev:** Short adit. **Assays:** Reportedly 8% to 10% copper and several dollars in gold and silver in the ore shipped. **Prod:** Few cars shipped 1914-1915. **Ref:** 54, p. 8. 97, 1914, p. 651; 1915, p. 572.

Windiate-Auberton (87)
(see under tungsten)

Windsor
(see Detroit-Windsor under gold)

Wolverine (149)
(see under gold)

Woo Loo Moo Loo (185)
(see under silver)

Wyoming (178)
(see also Peacock under silver)

Loc: Sec. 30, (35-25E), Conconully dist. **Prop:** 1 claim of Peacock group. **Ore:** Copper, lead, silver. **Ref:** 58, p. 74.

Yakima (69)
Loc: NW¼ sec. 21, (40-30E), Myers Cr. dist. **Owner:** Yakima Gold Mining Co. (1908-1915). Yakima Mining & Milling Co. (1902). **Ore:** Copper, gold, silver, lead, zinc. **Ore min:** Chalcopryrite, galena, sphalerite, pyrite. **Gangue:** Serpentine. **Deposit:** Sulfides disseminated and in veins a few in. to 6 ft. wide in serpentine. **Prod:** 1908. **Ref:** 88, p. 27. 97, 1908, p. 579.

Yellow Girl
Loc: Conconully dist. **Ore:** Copper, silver, gold. **Ref:** 112, p. 211.

PEND OREILLE COUNTY

Abraham-Huff (20)

Loc: Sec. 24, (34-44E), on S. shore of Browns Lk., Newport dist. **Prop:** 1 claim. **Owner:** J. C. Huff and W. W. Abraham. **Ore:** Copper. **Ore min:** Chalcopryrite, chalcocite, bornite, pyrite. **Gangue:** Quartz. **Deposit:** Faulted and brecciated zone in argillaceous sandstone. Zone is 2 to 3 ft. wide and has numerous mineralized quartz veinlets about ¼ in. wide. **Dev:** 20-ft. and 75-ft. adits and an adit with water-filled winze at 50 ft. **Ref:** 139, p. 39.

Ace High (9)
(see under silver)

Ackerlund (24)

Loc: SW¼ sec. 13, (33-44E), in saddle on top of ridge, Newport dist. **Elev:** 3,400 ft. **Access:** Near road. About 6 mi. from Usk. **Prop:** 240 acres deeded land. **Owner:** G. S. Ackerlund, Newport, Wash. (1948). **Ore:** Copper, zinc. **Ore min:** Chalcopryrite, pyrite, sphalerite. **Gangue:** Quartz, calcite. **Deposit:** 0 to 18-in. sparsely mineralized quartz vein in argillite. **Dev:** Caved adit and water-filled incline, totaling about 100 ft. **Assays:** 3 samples from widths of 1 to 4 ft. showed 0.06% to 0.49% Cu, 0.30% to 0.60% Zn, tr. Au, 0.20 to 0.25 oz. Ag. **Ref:** 139, p. 39. 157.

Alger and McCullough (32)

(see also Fair Hope under copper, Key Fraction under lead and Meteor under silver)

Loc: SE¼ sec. 15 and NE¼ sec. 22, (32-45E), Newport dist. **Access:** Road. **Prop:** Several claims, including Fair Hope, Key Fraction, Meteor. **Ore:** Copper, lead, silver. **Ore min:** Galena, chalcopryrite, arsenopryrite. **Gangue:** Quartz, calcite, siderite, serpentized diorite. **Deposit:** Ore minerals in bunches in irregular branching veins and stringers. **Ref:** 73, pp. 44-46. 130, p. 80.

Baker City (33)
(see under silver)

Bead Lake (34)
(see under lead)

Best Chance
(see Rainbow)

Blue Jim (15)
(see under silver)

Bornite (Holneck) (42)

Loc: Near SW. cor. sec. 35, (32-45E), on NE. side of Pend Oreille R. **Access:** 4 mi. from Newport by road. **Prop:** Approx. 220 acres of deeded land. **Owner:** W. H. Weston, Spokane, Wash. (1941). **Ore:** Copper, gold. **Ore min:** Pyrite, chalcopryrite, bornite, malachite. **Deposit:** Mineralized quartz veins from 1 to 2 ft. in width along shear zones in quartzite and argillite near intrusive diorite. **Dev:** 470-ft. adit with 100-ft. and 180-ft. drifts, a 200-ft. adit, and an inclined shaft. **Ref:** 29, pp. 67-68. 139, p. 43.

Box Canyon (16)

Loc: Sec. 20, (38-43E), about 500 ft. N. of the N. end of the bridge at Box Canyon. **Ore:** Copper. **Ore min:** Chalcopryrite. **Gangue:** Diopside, limestone. **Deposit:** 3 parallel fractures in limestone about 2 ft. apart are weakly mineralized. **Dev:** 4 open pits. **Ref:** 158.

Bromide
(see La Sota under silver)

Calispell (26)

Loc: SE¼NW¼ sec. 19, (33-45E), Newport dist. **Access:** Road. **Prop:** 2 unpatented claims. **Owner:** Jack Gallagher and

associates, Newport, Wash. (1941-1948). **E. M. Cook** (1893). **Ore:** Copper, gold. **Ore min:** Chalcopryrite. **Deposit:** Mineralized quartz vein 4 to 6 ft. wide. **Dev:** 2 adits about 500 and 300 ft. long, now caved (1950). **Prod:** Some production reported. **Ref:** 29, p. 70. 139, p. 43.

Campbell (Star) (28)

Loc: Sec. 23, (32-45E), Newport dist. **Access:** ½ mi. from road. **Prop:** 3 patented claims: Hawkeye, Gray Eagle, Last Chance. **Owner:** V. P. Campbell, Spokane, Wash. (1941). **Ore:** Copper, lead, silver, gold. **Deposit:** Mineralized quartz vein 6 ft. wide. **Dev:** 450 ft. of shaft and adit, all caved. **Ref:** 29, pp. 66, 71.

Champagne-Hoosier

(see Hoosier)

Comstock (35)

(see under lead)

Conquest

(see Kootenai Conquest under lead)

Copper Hill

Loc: Newport dist. **Owner:** Lone Star Copper Mining Co. (1918-1924). **Ore:** Copper. **Ref:** 58, p. 16. 98, 1918-1925.

Copper Queen (11)

Loc: Sec. 20, (39-43E), Metaline dist. **Access:** Road. **Prop:** 80 acres of patented land. **Owner:** Messrs. Troyer and Davenport, Newport, Wash. (1941). **Ore:** Copper. **Ore min:** Malachite. **Deposit:** Mineralized fracture zone in schist. **Dev:** 40-ft. adit. **Ref:** 29, p. 52.

Copper Queen (1)

Loc: Secs. 27 and 28, (40-43E), Metaline dist. **Access:** ¼ mi. from road. **Prop:** 3 unpatented claims. **Owner:** Tom Buckingham, Metaline, Wash. (1941). **Ore:** Copper, gold, silver. **Deposit:** Fracture zone in slate contains narrow mineralized quartz stringers. **Dev:** Open cuts, stripping. **Ref:** 29, p. 46.

Cougar (8)

Loc: Sec. 25, (39-44E), Metaline dist. **Access:** ½ mi. from road. **Prop:** 8 unpatented claims. **Owner:** Emil Reuther estate, Metaline Falls, Wash. (1948). **Ore:** Copper, lead, silver, gold. **Deposit:** Quartz vein as much as 4 ft. wide is sparsely mineralized. **Dev:** 800 ft. of adit. **Improv:** 2 cabins. **Ref:** 29, p. 34. 52, p. 7.

Eagle

(see Ries under lead)

Fair Hope (36)

(see also Alger and McCullough)

Loc: NE¼ sec. 22, (32-45E), Newport dist. **Access:** 8 mi. by road from railroad at Newport. **Prop:** 1 claim, part of Alger and McCullough group. **Owner:** Ed Alger, Newport, Wash. (1941). **Ore:** Copper. **Ore min:** Chalcopryrite, arsenopyrite. **Deposit:** Quartz veins in serpentinized diorite. **Dev:** 160-ft. adit. **Ref:** 73, pp. 45-46.

Fairview Copper

(see Skippy and Queen Bess under lead)

Fissure

(see under silver)

Flusey

(see Flusey-Hoopala under lead)

Flusey-Hoopala (2)

(see under lead)

General MacArthur (43)

(see under lead)

Glass

(see General MacArthur under lead)

Gold Arrow

(see Ries under lead)

Gold Coin-Hardtack (37)

(see under silver)

Golden Anchor

(see Ries under lead)

Grandview (Reuther) (6)

(see under silver)

Gray Eagle

(see Hawkeye-Gray Eagle-Last Chance)

Gypsy (7)

Loc: Secs. 17 and 18, (39-45E), Metaline dist. **Access:** Road. **Prop:** 10 unpatented claims. **Owner:** Formerly Frank Gramm, Colville, Wash., but believed abandoned (1941). **Ore:** Copper, gold, silver. **Deposit:** Mineralized quartz vein from a few in. to 4 ft. in width. **Dev:** 600 ft. of adits, partly caved. **Ref:** 29, p. 38.

Hansen (48)

(see under gold)

Hardrock Thomas (22)

Loc: SE¼SW¼ sec. 2, (33-44E), Newport dist. **Access:** Road. **Prop:** 2 patented claims. **Owner:** Richard Cunningham, Spokane, Wash. (1941-1948). **Ore:** Copper, silver, gold, tungsten. **Ore min:** Chalcopryrite, pyrite, scheelite. **Gangue:** Quartz, barite. **Deposit:** Mineralized quartz veins from a few in. to 6 ft. in width. **Dev:** 400 ft. of adits, numerous open cuts. **Ref:** 29, p. 69. 139, p. 44.

Hardtack

(see Gold Coin-Hardtack under silver)

Hawkeye-Gray Eagle-Last Chance (29)

Loc: SE¼ sec. 23, (32-45E), Newport dist. **Access:** 1,000 ft. from end of road at Marshall Lk. **Prop:** 2 patented claims and 1 unpatented claim. **Owner:** Delia Karsunky (1951). Hoover Mining Co., V. P. Campbell. **Ore:** Copper, lead, silver, gold. **Deposit:** Quartz vein. **Dev:** A caved adit about 300 ft. long has its portal in quartzite. A caved shaft. **Ref:** 29, p. 66. 139, p. 45.

Holneck

(see Bornite)

Hoosier (Champagne-Hoosier) (12)

Loc: Sec. 19 and center N½ sec. 30, (39-43E), Metaline dist. Adjoins Oriole property on SW. **Access:** 2½ mi. by road from town of Metaline Falls. **Prop:** 4 claims: Hoosier, Fairview, Champagne, Oriole West Extension. **Owner:** Pend Oreille Premier Mining Co. (1932-1941). **Ore:** Copper, gold, silver. **Ore min:** Malachite, pyrite. **Gangue:** Calcite, quartz. **Deposit:** Mineralized zone in serpentinized dolomite near its contact with quartzite. **Dev:** 175-ft. adit, 25-ft. shaft, 100-ft. adit. **Ref:** 29, p. 40. 46, pp. 36-38. 73, p. 70. 158.

Huff

(see Abraham-Huff)

Independence (30)

(see under silver)

Isabelle (21)

(see under gold)

Katydid

(see Ries under lead)

Key Fraction (38)

(see under lead)

Kootenai Conquest (39)

(see under lead)

Lakeside (31)

Loc: SE¼NW¼ sec. 23, (32-45E), on N. shore of Marshall Lk., Newport dist. **Elev:** At lake level. **Access:** 0.3 mi. by trail from end of road at Marshall Lk. **Prop:** 1 claim. **Owner:** W. H. Wright, Newport, Wash. (1948). **Ore:** Copper. **Ore min:** Chalcopyrite. **Gangue:** Quartz. **Dev:** A drift, caved at portal (1948). **Ref:** 139, p. 49.

La Sota (Silver Crest, Bromide) (17)

(see under silver)

Last Chance

(see Hawkeye-Gray Eagle-Last Chance)

Little Noisy (10)

(see under zinc)

Lloyd (46)

(see under lead)

McCann (23)

Loc: SE¼NE¼ sec. 2, (33-44E), Newport dist. **Access:** Road. **Prop:** 80 acres of deeded land. **Owner:** M. W. McCann (1941). **Ore:** Copper, silver, gold. **Deposit:** Said to be a mineralized quartz vein which varies in width from a few in. to 4 ft. **Dev:** Adit and several open cuts, all caved. **Ref:** 29, p. 71. 139, p. 50.

McCullough

(see Alger and McCullough)

Meade (4)

(see under lead)

Meteor (40)

(see under silver)

Midas

(see Ries under lead)

Mount Pisgah (47)

(see under lead)

O. K. (14)

(see under silver)

Oriole (13)

(see under zinc)

Pindle (49)

Loc: Sec. 30, (30-43E), Newport dist. **Access:** Road. **Prop:** Several unpatented claims. **Owner:** Abandoned (1941). **Ore:** Copper, lead, silver. **Deposit:** Narrow quartz stringers said to be mineralized. **Dev:** 100 ft. of adit, now caved (1941), and some open cuts. **Ref:** 29, p. 74.

Queen Bess

(see Skippy and Queen Bess under lead)

Rainbow (Best Chance) (25)

Loc: Sec. 14, (33-44E), Newport dist. **Access:** ¼ mi. from road. **Prop:** 1 unpatented claim. **Owner:** Charles Hubert, Usk, Wash. (1941). **Ore:** Copper, gold, silver. **Deposit:** Mineralized quartz veins as much as 4 ft. wide have been traced for 130 ft. in the adit. **Dev:** 130-ft. adit, caved shafts. **Improv:** Cabin (1941). **Assays:** Hand-picked samples assayed \$10, \$14, and \$22.50 per ton. **Ref:** 29, pp. 69-70.

Reidt (45)

Loc: Sec. 32, (31-45E), Newport dist. **Prop:** 160 acres of deeded land. **Owner:** Steve Reidt, Newport, Wash. (1941). **Ore:** Copper, gold. **Deposit:** Quartz stringers from a few in. to 3 ft. wide and said to carry copper and gold. **Dev:** None. **Ref:** 29, p. 72.

Reuther

(see Grandview under silver)

Reynolds Creek (18)

Loc: Sec. 25, (35-43E), Newport dist. **Access:** 1½ mi. from road. **Prop:** 1 unpatented claim. **Owner:** Jack Gallagher and Jack Salley, Newport, Wash. (1941). **Ore:** Copper, iron. **Dev:** 60-ft. caved shaft. **Ref:** 29, p. 65.

Ries (44)

(see under lead)

Riverside (5)

(see under lead)

Rocky Creek (17A)

(see under silver)

Silver Crest

(see La Sota under silver)

Skippy and Queen Bess (19)

(see under lead)

Snowbird and Stanley (41)

(see under lead)

Snyder

(see Gold Coin-Hardtack under silver)

Stanley

(see Snowbird and Stanley under lead)

Star (Independence)

(see Independence under silver)

Star

(see Campbell)

Uncas (3)

(see under zinc)

Victory (27)

Loc: Sec. 19, (33-45E), Newport dist. **Access:** Road. **Prop:** 2 unpatented claims. **Owner:** Jack Gallagher et al., Newport, Wash. (1941). **Ore:** Copper, gold. **Deposit:** Said to be a 6-ft. quartz vein which carries values in copper and gold. **Dev:** 200 ft. of adit and shaft, caved (1941). **Ref:** 29, p. 75.

West

(see Blue Jim under silver)

PIERCE COUNTY**Blue Star**

Loc: T. 18 N., R. 8 E. on Cowcowan Cr., a tributary of the Carbon R. **Access:** 6½ mi. by trail from Fairfax. **Prop:** 14 claims. **Ore:** Copper, gold, silver. **Ore min:** Chalcopyrite. **Deposit:** 9 veins from 8 in. to 8 ft. wide occur in gneiss. **Dev:** 40-ft. adit. **Ref:** 88, pp. 91-92.

Bunny (4)

Loc: Sec. 25, (18-7E), several hundred ft. above the Surprise adit. **Owner:** Charles Stafford (1941). **Ore:** Copper. **Ore min:** Chalcopyrite. **Gangue:** Tourmaline, quartz. **Deposit:** Veinlets up to 3 in. thick. **Dev:** Caved adit (1941). **Ref:** 158.

Carbon River (2)

Loc: Reportedly 500 ft. S. of the Carbon R. road and ¼ mi. below the Mt. Rainier National Park entrance. Approx. sec. 1, (17-6E), **Ore:** Copper. **Ore min:** Chalcopyrite. **Deposit:** Reportedly a chalcopyrite-bearing vein 2 ft. thick. **Assays:** Said to be rich. **Ref:** 158.

Chicago

Loc: 9 mi. from Fairfax, a short distance from the trail leading to the Surprise property. **Prop:** 6 claims. **Owner:** Monte-

zuma Mining Co. (1901). **Ore:** Copper, gold. **Ore min:** Chalcopyrite. **Deposit:** Fissure vein in diorite. **Dev:** Small amount. **Ref:** 88, p. 91.

Clipper (Mothers Day) (5)

Loc: N $\frac{1}{2}$ NE $\frac{1}{4}$ sec. 25, (18-7E), adjoining Surprise group on the SE. **Access:** Trail. **Owner:** Stanley Slejeski and Charles Zinski, Tacoma, Wash. (1943). **Ore:** Copper. **Ore min:** Chalcopyrite, pyrite, arsenopyrite, malachite. **Gangue:** Quartz, tourmaline. **Deposit:** Mineralized vertical joints in granodiorite as much as 4 in. wide. **Dev:** 900-ft. adit with 3 or 4 short crosscuts. **Ref:** 88, p. 91. 158.

Copper King (9)

Loc: SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 19, (18-8E), $\frac{1}{2}$ mi. N. of Coplay Lk. **Elev:** 4,160 ft. **Access:** Road from Fairfax. **Owner:** Lawrence Falick, Tacoma, Wash. (1941). **Ore:** Copper. **Ore min:** Malachite, pyrite. **Gangue:** Quartz, tourmaline. **Deposit:** Veinlets in granodiorite. **Dev:** 50-ft. adit, 76-ft. adit, caved adit (1941). **Prod:** Test shipment in 1918. **Ref:** 97, 1919, p. 492. 158.

East Lake (7)

Loc: $\frac{1}{2}$ mi. due E. of the Surprise group. **Prop:** 6 claims. **Owner:** Washington Co-operative Mining Syndicate (1901-1907). **Ore:** Copper. **Ore min:** Chalcopyrite. **Deposit:** A number of veins in syenite. **Ref:** 33, 1907, p. 1154. 88, p. 91.

Eastlick

Loc: Carbon R. dist. **Owner:** Copper King Mining Syndicate (1907-1918). **Ore:** Copper. **Ref:** 33, 1907, p. 523. 98, 1918, p. 75.

Golden Rule (8)

(see under zinc)

Larigo

(see Tillie and Larigo)

Lone Star

Loc: Summit dist. **Ore:** Copper, gold, silver. **Ref:** 63, p. 46.

Lorraine

Loc: Carbon R. dist. **Owner:** Lorraine Copper Mining Co. (1907-1908). **Ore:** Copper, silver, gold. **Ref:** 33, 1907, p. 752; 1908, p. 888.

Mashel (1)

Loc: N $\frac{1}{2}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 22, (16-4E). **Access:** 2 mi. W. of Eatonville by road. **Owner:** Mr. Denman. **Ore:** Copper. **Ore min:** Native copper. **Gangue:** Altered volcanics. **Deposit:** Brownish-red altered lava with thin seams of native copper along joints. Rock exposed for $\frac{1}{2}$ mi. along creek. **Prod:** Mined for copper in 1900's. Later used for paint pigment. **Ref:** 158.

Mothers Day

(see Clipper)

Mt. Rainier

(see Storbo)

New Deal

(see Washington Cascade under gold)

Silver Creek (12)

(see under gold)

Silver Creek Gold & Lead (11)

(see under gold)

Storbo (Mt. Rainier) (10)

Loc: Approx. sec. 8, (16-9E), at head of Inter Fk. of White R. on N. side of Mt. Rainier. **Access:** Trail. **Owner:** Mount Rainier Mining Co., Inc., Seattle, Wash. (1916—). **Ore:** Copper. **Ore min:** Chalcopyrite. **Gangue:** Tourmaline. **Deposit:**

Lenticularly and intermittently mineralized fractures in Keechelus andesite up to 1 ft. thick. **Dev:** 7 adits totaling about 1,500 ft. of workings. **Improv:** 1 cabin (1952). **Prod:** 1915-1917, 1926, 1928. **Ref:** 68, p. 12. 97, 1915-1917, 1926, 1928. 158.

Surprise (6)

Loc: N $\frac{1}{2}$ NE $\frac{1}{4}$ sec. 25, (18-7E), on E. side of Old Baldy Mtn. halfway between Coplay and Summit Lakes, Carbon R. dist. **Elev:** 4,000 ft. **Access:** Trail up Cayada Cr. from Carbon R. road. **Prop:** 13 claims, including Surprise and Hog Back. **Owner:** C. T. Stafford, Tacoma, Wash. (1943). A. B. Crain (1941). **Ore:** Copper, gold. **Ore min:** Chalcopyrite, bornite, pyrite. **Gangue:** Tourmaline, quartz. **Deposit:** Joint planes in granodiorite have been hydrothermally altered and mineralized. Mineralized portions range in width from 2 to 12 in. **Dev:** 465-ft. adit with 2 short raises. **Prod:** Test shipment in 1919. **Ref:** 88, pp. 90-91. 158.

Tacoma

(see also Washington Cascade under gold)

Loc: On Mowich R., 17 mi. by trail SE. of Fairfax, Carbon R. dist. **Access:** Trail. **Prop:** 4 claims. **Owner:** Blue Bell Gold Mining Co., Tacoma, Wash. (1938). Washington Co-operative Mining Syndicate (1901-1907). Washington Cascade Mining Co., Tacoma, Wash. (1938). **Ore:** Copper, gold, silver. **Ore min:** Chalcopyrite. **Gangue:** Calcite. **Deposit:** Mineralized zone 25 ft. wide contains disseminated chalcopyrite. Also a rich streak 3 ft. wide along the footwall. **Dev:** 200-ft. drift with 5 crosscuts aggregating 100 ft. **Assays:** Said to carry 5% to 33% Cu, \$2 Au, \$3.50 Ag. **Prod:** Test shipments about 1900. **Ref:** 33, 1907, p. 1154. 88, p. 92. 158.

Tillie and Larigo (3)

Loc: Sec. 33, (18-7E), across Carbon R. from Mt. Rainier National Park entrance. **Elev:** 300 ft. above valley floor. **Owner:** L. Falick (1941). **Ore:** Copper. **Ore min:** Chalcopyrite, pyrite. **Deposit:** Veinlets of sulfides less than $\frac{1}{2}$ in. wide cut granodiorite. **Ref:** 158.

Vanguard

Loc: Eatonville area. **Ore:** Copper. **Ref:** 63, p. 46. 169, pp. 41-42.

Washington Cascade (13)

(see under gold)

Washington-Wonder

Loc: Fairfax area. **Ore:** Copper. **Prod:** Development ore shipped in 1910. **Ref:** 97, 1910, p. 604.

Wonder

(see Washington-Wonder)

SKAGIT COUNTY

Anacopper (1)

Loc: $3\frac{1}{2}$ mi. SW. from center of Anacortes, but within city limits. **Access:** Road. **Prop:** 20 acres deeded land. **Owner:** R. M. Brown, Seattle, Wash. (1941). M. Donopolis and S. W. Schreiber, Anacortes, Wash. (1934). **Ore:** Copper, gold, silver. **Ore min:** Copper carbonates. **Deposit:** Copper disseminated and in fractures in shear zone in granite. **Dev:** 8 shallow shafts. **Assays:** 1% to 2 $\frac{1}{2}$ % Cu, 0.05 oz. Au, 1 oz. Ag in sample from dump. **Ref:** 157. 158.

Bald Mountain (4)

Loc: Sec. 17, (34-6E), near summit of Bald Mtn. **Access:** Road and trail from Clear Lk. **Owner:** Bald Mountain Mining Co. (1902). **Ore:** Copper, gold. **Deposit:** Mineralized zone 16 ft. wide in schist. **Dev:** 60-ft. shaft, 50-ft. shaft, and 420-ft. crosscut adit. **Assays:** One assay showed 30% Cu, \$3.00 Au. **Ref:** 88, p. 52.